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VOLUME XX.

JUNE, 1921—MAY, 1922

INDEX

Page

Acidosis 527
Acromegaly, Case of 135
Advisory Committee on Hospitals, Report of 373
Allen, L. P., The Importance of Early Incision of the Membranum Tympani in Acute Otitis Media with Profuse Exudate 69
Andrews, Neil, The Doctor for the Age of Doubt 317
Anemia, Types of Severe 497
Anesthesia in Thyroidectomies, Local ... 14
Anesthesia Problem, Some Aspects of the Local 547
Angina Pectoris, The Effect of Occlusion of the Coronary Arteries on the Heart's Action and Its Relationship to 449
Anti-Serum in Streptococcus Septicaemia, The use of 443
Appendicitis, A plea for the Gridiron Incision in 215
Arterio-Sclerosis, Experimental 427
Arthrodesis by Bone Splitting Method, Sacro Iliac Joint 20
Association News 96, 149, 205, 254, 486, 540, 588
Bainbridge's Shellac 343
Banti's Disease, Splenic Anemia or 472
Bassoe, Peter, The Sequelae of Epidermic Encephalitis 263
Belliu, Jos., Refraction of School Children 184
Benson, Gideon, Some Observations on the Prevention and Control of Communicable Diseases 248
Bevan, Arthur D. Tumors of the Breast from the Standpoint of the General Practitioner and the General Surgeon.. 460
Black, Nelson M. A Resume of the Ocular Manifestations in Pregnancy 181
Blood Transfusion 322
Bone Graft, The Fate of the 407
BOOK REVIEWS:
Abdominal Pain, Norbert Ortner..... 595
Bacteriology—General, Pathological and Intestinal—Arthur Isaac Kendall 358
Bacteriology, A Textbook of General, Edwin O. Jordon 546
Bacteriology, Estelle D. Buchanan and Robert Earl Buchanan 493
Benign Stupors 442
Clinical Diagnosis, Charles Phillips Emerson 440
Clinical Electrocardiography, Frederick A. Willius 594
Clinical Tuberculosis, Francis Marion Pottenger 594
Council on Pharmacy and Chemistry of the A. M. A., Annual Reprint of the Reports of the 48
Defective Delinquent and Insane, The, Henry A. Cotton..... 596
Dermatology, W. J. Highman 23
Diabetic Patients, A Primer for, Russel M. Wilder, May Foley and Daisy Eilithorpe 45
Dictionary, American Illustrated Medical, Dorland 595
Dietetics, A Laboratory Handbook for, Mary Schwartz Rose 260
Digestive Organs, Diseases of the, Charles D. Aaron 358
Diseases of Children, Herman B. Scheffield 494
Diseases of the Skin, Oliver S. Ormsby 157
Diseases of the Skin, Henry W. Stelwagon 357
Diseases of the Skin, Richard L. Sutton 357
Diseases of the Skin and Eruptive Fevers, J. F. Shamberg 594
Disturbances of Instincts and Effects, Wilhelm Steckel 102
Epidemiology and Public Health, Victor C. Vaughn 440
Eyeground in General Diseases, The, H. Koelker 157
Functional Diagnosis, Max Kahn 156
Glands, Regulating Personality, The, Louis Berman 358
Gynecology, Brook M. Anspach 102
Handbook of Clinical Hydro-, Balneo-, and Climoto-Therapy Alois Strasser, Franz Kirsch and E. Somers 101
Healthy Child from Two to Seven, The, Francis Hamilton MacCarthy..... 598
Heule, The Life of Jacob, Victor Robinson 546
Human Behavior in Relation to the Study of Educational, Social and Ethical Problems, Stuart Patou 212
Immunology, The Principles of, Howard T. Karsten and Enrique E. Ecker 102
Infant Feeding, Clifford Grulee..... 595
Infections of the Hand, Allen B. Kanavel 157

Page

Insane, Social Aspects of the Treatment of the, John A. Goldberg 442
Insanity and Mental Deficiency in Relation to Legal Responsibility, Wm. G. H. Cook 357
Keen's Surgery, Vol. VIII, W. W. Keen 48
Laboratory Diagnosis, Essentials of, Francis Ashley Faught 440
Landmarks and Surface Markings of the Human Body, L. Bathe Rawling 211
McDowell, Ephraim, Father of Ovariotomy 494
Management of the Sick Infant, Langley Porter and Will E. Carter..... 648
Manner of Man that Kills, The, L. Vernon Briggs 156
Massage and Therapeutic Exercise, Mary McMillan 101
Mayo Clinic, 1920 Collected Papers of, W. B. Saunders Co. 356
Mayo Foundation, Papers from the 546
Mechanics of the Digestive Tract, Walter C. Alvarez..... 596
Medical Clinics of No. America, The, Vol. IV. No. 6 212
Medical Clinics of No. America, The, Vol. V. 598
Medical Clinics of No. America, The, Vol. V. No. 2 493
Medical Clinics of No. America, The, Vol V. No. 3 493
Medical Electricity and Roentgen Rays, Sinclair Tousey, ... 101
Medicine, History of, Fielding H. Garrison 357
Mental Defectives, Types of, Martin W. Barr and E. F. Maloney 102
Microscopy of the Living Eye, The, Koepe, Leonard and Halle 158
Mind and Its Disorders, W. H. D. Stoddard 262
Motherhood, H. W. Long 493
Mysticism, Freudianism and Scientific Psychology, Knight Dunlap 310
Neoplastic Diseases, James Ewing 594
Nerves and the Man, W. Charles Loosmore 260
Nervous System, Clinical Examination of, G. H. Monrad-Krohn 493
Nostrums and Quackery, A. M. A. .. 310
Nostrums and Quackery, Vol II. Arthur J. Cramp 494
Nutrition and Clinical Dietetics, Herbert S. Carter, Paul E. Howe, and H. H. Mason 156
Opiate Addiction—Handling and Treatment, Edward H. Williams..... 598
Pathology, A Textbook of, Alfred Stengel and Herbert Fox 101
Pathology, General, Horst Oertel..... 158
Peripheral Nerves, Surgical and Mechanical Treatment of..... 596
Physical Diagnosis, W. D. Rose..... 158
Physiology of Mind, An Essay on the, Francis X. Dercum 596
Pit-Falls, A. J. Caffrey 442
Practical Infant Feeding, Lewis Webb Hill 648
Practice of Medicine, The, Hughes Dayton 156
Practical Medicine Series, Vol. I. General Medicine 493
Practical Medicine Series Vol. II. General Surgery, Albert J. Ochsner 310
Practical Medicine Series, Vol. III., Eye, Ear, Nose and Throat—Wood, Andrews and Shamhaugh 310
Practical Medicine Series, Vol. V., Gynecology by John C. Dudley and Obstetrics by Joseph E. DeLee..... 596
Principles of Hygiene, D. H. Bergey.. 45
Principles of Therapeutics, The, Oliver T. Osborne 45
Prostitution in the United States, Henry B. Woolston 442
Psychic Health of Jesus, Walter H. Bundy 598
Psychoanalysis, Its Theories and Practical Application. A. A. Brill 595
Psychoanalysis, The Elements of Practical, Paul Bousfield 260
Psychoanalysis, The Technique of, Smith Ely Jelliffe 45
Psychoanalytic Study of Psychoses with Endocrinoses, A. Dudley Ward Fay.. 648
Psychology for Medical Students and Physicians, A Textbook of, Wm. H. Howell 546
Radiant Energy and the Ophthalmic Lens, Frederick Booth 101
Religion and the New Psychology. Walter Samuel Swisher 260
Reginal Anesthesia, B. Sherwood-Dunn 23
Ringworm and Its Sucessful Treatment, John P. Turner 493

Page

Roentgen Interpretation, Geo. W. Holmes and H. E. Ruggles 156
Sodium Arsphenamin, The Toxity and Trypanocidal Activity, Jay Frank Schamberg, John A. Kolmer and Geo. W. Raiziss 212
South America from a Surgeon's Point of View, Franklin H. Martin 596
Spleen and some of Its Diseases, The, Sir Berkeley Moynihan 358
Squint—Its Causes, Pathology and Treatment, Claud Worth 157
Starvation, Treatment of Diabetes, The, (Allen) 157
Studies in Dreams, Mary Arnold Forster 260
Suggestion and Autosuggestion, Charles Boudouin 442
Surgery of the Upper Abdomen, John B. Deaver and A. P. Cooper Ashburst 23
Surgery, Operative, J. Shelton Horsley 158
Surgical Anatomy, Wm. F. Campbell 358
Surgical Clinics of No. America, The, Vol. I, No. 2 104
Surgical Clinics of No. America, The, Vol. I, No. 3 212
Surgical Clinics of No. America, The, Vol. II, No. 1..... 598
Surgical Clinics of No. America, The, Vol. I, No. 5 493
Surgical Subjects, Essays on, Sir Berkeley Moynihan 262
Syphilitic, The Social Worker's Approach to the Family of, Maida H. Solomon 214
Syphilitic Manifestation in the Nose, A. Harold M. Hays 212
Syphilis in the Nervous System in Children, Edw. Livingston Hunt 214
Taboo and Genetics, M. M. Knight, L. Peter and Phyllis Blanchard 259
Thyroid Gland, The, Geo. W. Crile and Associates at Cleveland Clinic .. 596
Transactions of the College of Physicians of Philadelphia, Vol. 42 494
Tuberculosis and How to Combat It, Francis M. Pottenger 102
Unconscious, The, Morton Prince 442
Vice and Health, John Clarence Funk.. 440
Women Delinquents in New York State, A Study of, Mabel Ruth Fernald, Mary Holmes Hayes and Almena Dawley 260
Bowman, F. F., Factors Responsible for the increase of Typhoid Fever in Wisconsin During the Year 1921 345
Bradley, H. C., Some Recent Advances in Chemistry as Aids to the Clinician 513
Brazeau, G. N., Circumscribed Ectasia of the Cornea 296
Briggs, Lt. Col. L. Vernon, Defective Delinquents in the Army of Occupation or the American Forces in Germany 230
Brooks, Everett H., When to Operate Mastoid in Children 66
Brown, G. V. I., Diagnosis of Cancer of the Buccal Cavity..... 603
Bunting, C. H., Cancer Questions..... 602
Cancer Committee, Report of the 371
Cancer Investigation and Experimental Cancer 107
Cancer, Symposium on..... 599
1. Statistical Data 599
2. Sociological Aspects 600
3. Cancer Questions 602
4. Diagnosis of Cancer, Buccal Cavity 603
5. Early Diagnosis, Gastro-Intestinal Carcinoma 605
6. Cancer of the Breast..... 607
7. Cancer of Female Generative Tract 608
8. Cancer of Genito-Urinary Tract.... 615
9. Carcinoma Cutis—Diagnostic Outline 619
Cancer Week Program 532
Cardiac Arrhythmia, A Consideration of Two Common Types 551
Cardiac Diseases in a Children's Dispensary, The Management of 225
Cardio-Spasm with Enormous Dilatation of the Esophagus, Report of a Case of 297
Cardio-Vascular Conditions Upon Surgical Risk, The Influence of Certain.. 58
Caswell, H. O. and Majerus, P. J., Open Safety Pins in the Stomach and Intestine 83
Chapman, V. A., The After-care in Tonsilectomy 328
Chemistry as Aids to the Clinician, Some Recent Advances in 513
Cholecystitis Complicating Paratyphoid Fever with Subsequent Isolation of Bacillus Paratyphosus from the Bile, Case Report of 573

INDEX

Page

Christian, Henry A., The Relation that Exists between Hypertension, Myocarditis and Nephritis ... 455
Clinic of F. G. Connell ... 238
Clinic of Geo. F. Fahr ... 242
Clinic of H. P. Greeley ... 28
Clinic of Henry B. Hitz ... 296
Clinic of V. F. Marshall ... 31
Clinic of Phil F. Rogers ... 423
Clinic of T. W. and A. R. Tormey ... 246
Clinic of Dr. L. M. Warfield, Milwaukee County Hospital ... 242, 420, 577
Clinical Case Report By J. F. Smith and M. L. Jones ... 30
Communicable Disease Control, The Relation of the Health Officer to the Public Health Nurse in ... 38
Communicable Diseases by the Physician to the Health Officer, An Illustration of the Importance of Prompt Reporting of ... 343
Communicable Diseases, Some Observations on the Prevention and Control of 248
Contributions of Young Men to Medicine, Some ... 161
Cooksey, Roger T., Blood Transfusion .. 322
Cornea, Circumscribed Ectasia of ... 296
Correspondence ... 152, 256, 352, 589
Cunningham, Wilson, The Surgical Treatment of Empyema Complicating Pneumonia ... 4
DEATHS:
Anderson, H. B. ... 309
Ballars, John A. ... 542
Beebe, C. A. ... 542
Bingham, Eugene ... 309
Brindley, Roy ... 309
Burke, Thomas ... 99
Byrnes, Frank ... 542
Cady, M. P. ... 491
Colter, Geo. F. ... 354
Conkey, C. D. ... 209
Currens, J. R. ... 438
Dake, A. J. ... 258
Durner, Mrs. U. J. ... 543
Fickes, H. C. ... 154
Field, F. T. ... 209
Gobar, G. G. ... 542
Helm, E. C. ... 258
Hinu, L. P. ... 438
Jacobs, E. N. ... 491
King, O. A. ... 258
Linkman, E. G. ... 438
Little, A. H. ... 99
Love, George E. ... 592
McKivitt, W. E. ... 308
Mason, Geo. F. ... 45
Metcalf, Arthur A., Yakima, Wash. ... 592
Murphy, E. C. ... 209
O'Brien, R. J. ... 353
Quackenbush, W. K. ... 542
Reich, Hugo C. ... 646
Robbins, H. ... 646
Schnug, Durand ... 592
Shepard, Gilbert, Santa Cruz, Calif. .. 592
Smiles, Mrs. C. J. ... 309
Stalker, H. J. ... 308
Sutherland, Arick ... 354
Voss, Herman H. ... 99
Wakefield, Solon ... 543
Westedt, Otto ... 99
Defective Delinquents in the Army of Occupation of the American Forces in Germany ... 230
Delegate to the Council on Health and Public Instruction, A. M. A., Report of ... 375
Delegate to Council on Medical Education and Hospitals, A. M. A., Report of ... 374
Delegates to A. M. A., Report of ... 373
Derge, H. F., Local Anesthesia in Thyroidectomies ... 14
Diphtheria Carriers ... 581
Diphtheria, Deaths from ... 142
Doctor for the Age of Doubt, The ... 317
Doege, Karl W., The Internal Secretions of the Skin ... 125
Dorpat, Louis, An Illustration of the Importance of Prompt Reporting of Communicable Diseases by the Physician to the Health Officer ... 343
Dorpat, Louis, The Relation of the Health Officer to the Public Health Nurse in Communicable Disease Control 38
Dunham, Kennon, X-Ray Examination of the Chest and an X-Ray Classification of Pulmonary Tuberculosis ... 49
Echols, Chester M., Acute Ileus Produced by a Large Gallstone ... 474
Echols, C. M. Prolapsus Uteri, Complicated by Double Pyosalpinx ... 134
Editorials ... 24, 76, 130, 190, 234, 290, 332, 416, 468, 523, 570, 629
Elliott, Miss Emily I., Some Aspects of School Nursing ... 37
Elsom, James C., Physio Therapeutic Treatment in War Injuries and Industrial Accidents ... 116

Page

Empyema Complicating Pneumonia, The Surgical Treatment of ... 4
Empyema following Pneumonia in Infant of Four Months ... 136
Encephalitis, Epidemic ... 122
Encephalitis Lethargica, Ocular Manifestations in ... 268
Encephalitis, The Sequelae of Epidemic.. 263
Epilepsy, Luminal in the Treatment of.. 519
Epidemiologist, The Public Health Nurse as an ... 429
Erythromalalgia Associated with Polycythemia Vera, Report of a Case of ... 475
Evans, C. A., Unlocalized Intracranial Injuries, Indications for Surgical Treatment ... 410
Evans, James A. and Skemp, A. A., Report of a Case of Erythromalalgia Associated with Polycythemia Vera ... 475
Farr, Robt. E., Some Aspects of the Local Anesthesia Problem ... 547
Fellman, Geo. H., Report on an Epidemic of Gastro-Enteritis ... 227
Fletcher, E. A., Cancer of the Urinary Tract ... 615
Fletcher, E. A. and Kearns, W. H., Ureterolithotomy Followed by a Rare Post-Operative Complication ... 138
Foerster, Harry R., Carcinoma Cutis, Diagnostic Outline ... 619
Fricke, Robt. E., A Case of Peritoneal Tuberculosis Treated with Radium ... 141
Gaenslen, F. J., Chronic Diseases of the Hip Joint ... 84
Gaenslen, F. J., Sacro Iliac Joint Arthrodesis by Bone Splitting Method ... 20
Gaenslen, F. J., The Surgery of Infantile Paralysis ... 555
Gall-Stones, Their Basal Etiology ... 220
Gastro-Enteritis, Report on an Epidemic of ... 227
Glioma of the Brain Demonstrating the Necessity of a Complete History as Essential to Correct Diagnosis, Report of a Case of ... 80
Goitre, The Prevention of ... 477
Goitre, The Relationship between the Pathology and Symptomatology of... 179
Goitre, Selection of Operation in Toxic ... 105, 175
Greeley, H. P., Acidosis ... 527
Greeley, H. P., Early Wisconsin Medical History ... 558
Greeley, H. P., Obesity ... 295
Ground, Wm. E., Cancer Investigation and Experimental Cancer ... 107
Gudex, V. A., Oral Hygiene as a Public Health Problem ... 300
Guilford, H. M., Water as a Factor in the Spread of Typhoid Fever ... 531
Hay Fever, Intravenous Treatment for,.. 341
Health and Public Instruction, Report of the Committee on ... 370
Health Officer to the Public Health Nurse in Communicable Disease Control, The.. Relation of the ... 38
Hones, Edwin, Gall Stones, Their Basal Etiology ... 220
Hip Joint, Chronic Diseases of the 84
Hogue, G. I., Ocular Manifestations in Encephalitis Lethargica ... 268
Holbrook, Arthur T., The Influence of Certain Cardio - Vascular Conditions upon Surgical Risk ... 58
Hopkinson, Daniel and Tharinger, E. L., The Pathology of the Pneumonias Found in the Recent Epidemics of Influenza ... 10
Hospital Survey of Wisconsin ... 206
House of Delegates—Session Sept. 6, 1921 362
House of Delegates—Session Sept. 7-8, 1921 ... 388
House of Delegates—Session Sept. 9, 1921 396
Hypertension, Myocarditis and Nephritis, The Relation that Exists between 455
Ileus Produced by a Large Gallstone, Acute, ... 474
Incision of the Membranum Tympani in Acute Otitis Media with Profuse Exudate, The Importance of Early ... 69
Industrial Hygiene and Home Environment: with Special Reference to the Incidence of Tuberculosis ... 144
Industrial Hygiene and Sanitation in Wisconsin, Observation of ... 85
Industrial, State and Group Medicine ... 313
Infantile Paralysis, The Surgery of ... 555
Influenza, The Pathology of the Pneumonias Found in the Recent Epidemics of ... 10
Intracranial Injuries, Indications for Surgical Treatment, Unlocalized ... 410
Intrathoracic Surgery, Physiologic Rationale for, ... 510
Jermain, Louis F., Case of Acromegaly 135
Jermain, Louis F., Case of Primary Sarcoma of the Lung ... 82
Jermain, Louis F., Splenic Anemia, or Banti's Disease ... 472

Page

Jonas, A. F., The Fate of the Bone Graft ... 407
Journal Book Shelf ... 46, 100, 155, 211, 259, 310, 356, 439, 492, 544, 593, 647
Journal Clinic ... 28, 80, 134, 194, 238, 295, 336, 420, 472, 526, 573, 632
Kearns, W. H. and Fletcher, E. A., Ureterolithotomy Followed by a Rare Post-Operative Complication ... 138
Kidney, Infections of the ... 277
Koehler, J. P., Intravenous Treatment for Hay Fever ... 341
Konop, Thomas F., The Workmen's Compensation Act and the Doctors ... 197
Lewis, Dean, Peripheral Nerve Injuries in Civil Life ... 169
Longcope, Warfield T., The Effect of Occlusion of the Coronary Arteries on the Heart's Action and its Relationship to Angina Pectoris ... 449
Lorenz, W. F., The Treatment of Central Nervous System Syphilis with a New Arsenical ... 336
Luminal in the Treatment of Epilepsy .. 519
Lung Abscess following Tonsillectomy ... 139
Lung Disease, An Interesting Case of .. 526
McGarty, M. A., Some Contributions of Young Men to Medicine ... 161
McGovern, P. H., Sociologic Aspects of Cancer and Obligation of Medical Profession to Perfect Itself in Diagnosis.. 600
McMahon, J. P., Statistical Data on Symposium of Cancer ... 599
McMahon, J. P., Symptoms and Diagnosis of the Female Generative Tract.... 608
Marriages ... 99, 154, 210, 258, 309, 491, 646
Marsh, Harold E., and Vingom, Claire O., The Use of Anti-serum in Streptococus Septicaemia ... 443
Marshall, V. F., A Plea for the Gridiron Incision in Appendicitis ... 215
Mastoid in Children, When to Operate.. 66
Mayo, Wm. J., The Relation of Splenic Syndromes to the Pathology of the Blood ... 503
Medical Defense, Report of Committee on 367
Medical Education, Report of Committee on ... 371
Medical History, Early Wisconsin ... 558
Medical Library Association, 24th Annual Meeting of the ... 99
Medical Practice in Wisconsin ... 324
Megalocolon ... 17
Members of the State Medical Society of Wisconsin, List of, ... 400
Mensing, E. H., and Rogers, M. F., Splenectomy for Congenital Hemolytic Jaundice ... 85
Metabolic Diseases caused by Tissue Extract (Cytost) ... 271
Metastatic Infection ... 194
Murphy, F. D., Luminal in the Treatment of Epilepsy ... 519
Murphy, F. D., Lung Abscess Following Tonsillectomy ... 139
Necrology, Report of the Committee on, 371
Newburgh, L. H., Experimental Arterio-Sclerosis ... 427
News Items and Personals ... 44, 97, 152, 208, 257, 307, 352, 436, 490, 541, 590, 645
Starr, Nicholas M., Pure Water ... 89
Nuzum, T. W., Megalocolon ... 17
Obesity ... 295
Obstetrics in Rural Communities ... 285
Obstetrics, Postgraduate Courses in 427
Occlusion of the Coronary Arteries on the Heart's Action and Its Relationship to Angina Pectoris, The Effect of, ... 449
Ocular Manifestatious in Pregnancy, A Resume of the, ... 181
Officers of State and County Societies and List of Executives ... 42, 94, 148, 252, 306, 350, 434, 484, 537, 587, 643
Oleson, Robt., Industrial Hygiene and Home Environment. With Special Reference to the Incidence of Tuberculosis ... 144
Oleson, Robt., Observations on Industrial Hygiene and Sanitation in Wisconsin 85
Oleson, Robt., The Prevention of Goitre 477
Oleson, Robt., The Public Health Nurse as an Epidemiologist ... 429
Oral Hygiene as a Public Health Problem ... 300
Perineal Lacerations, The Post Operative Care of Complete, ... 136
Periosteal Sarcoma ... 424
Peripheral Nerve Injuries in Civil Life .. 169
Physiologic Rationale for Intrathoracic Surgery ... 510
Physio-Therapeutic Treatment in War Injuries and Industrial Accidents ... 116
Pleyte, A. A., An Interesting Case of Lung Disease ... 526
Pneumonia, The Use of Stimulants in, ... 1
Pneumonias Found in the Recent Epidemics of Influenza, The Pathology of the, 10
Postgraduate Courses in Obstetrics ... 427
Premature Contraction, The ... 114

NOV 1 3 ...

109916

Page
Preventive Medicine 37, 86, 142, 197, 248, 300, 343, 429, 477, 531, 581, 636
Proiapsus Uteri, Complicated by Double Pyosalpinx 134
Public Health News Items, 347, 432, 479, 585
Public Health Nurse as an Epidemiologist, The, ... 429
Publication Committee, Report of 364
Public Policy and Legislation, Report of Committee on 362
Purpura Hemorrhagica 575
Rishmiller, John H., Metastatic Infection 194
Rogers, A. W., Epidemic Encephalitia .. 122
Rogers, Malcolm F., A Consideration of Two common Types of Cardiac Arrhythmia 551
Rogers, Philip F., Early Diagnosis in Gastro-Intestinal Carcinoma 605
Rosenberger, A. I., Report of a Case of Glioma of the Brain Demonstrating the Necessity of a Complete History as Essential to Correct Diagnosis 80
Rowntree, L. G., Water Balance, Diabetes Insipidus and Water Intoxication 426
Ruhland, Geo. C., Kenney, C. J., Schiller, L., Deaths from Diphtheria 142
Sacro Iliac Joint Arthrodesis by Bone Splitting Method 20
Safety Pins in the Stomach and Intestine, Open 83
Sarcoma of the Lung, Case of Primary, 82
Schlomovitz, Benj. H., Arrangement of Symposium on Cancer..... 599
School Nursing, Some Aspects of, ... 37
Schwartz, A. B., The Management of Cardiac Diseases in a Children's Dispensary 225
Secretary, Report of 382
Seeger, S. J., Selection of Operation in Toxic Goitre 105, 175
Shurley, Burt R., Industrial, State and Group Medicine 313
Shutter, H. W., The Post Operative Care of Complete Perineal Lacerations 136
Skin, The Internal Secretions of the, ... 125
Smith, E. V., The Relationship Between the Pathology and Symptomatology of Goitre 179
Smith, Fred M., The Premature Contraction 114
Splenectomy 473
Splenectomy for Congenital Hemolytic Jaundice 85
Splenic Anemia or Banti's Disease 472
Splenic Syndromes to the Pathology of the Blood, The Relation of 503

Page
Stengel, Alfred, Types of Severe Anemia 497
St. Joseph's (Milwaukee) Medical and Surgical Clinic 34, 134, 337, 424, 472, 529
Stratton, F. A., Splenectomy 473
Streptoccus Septicaemia, The Use of Anti-Serum in, ... 443
Snodgrass, T. J., Report of a Case of Cardio-Spasm with Enormous Dilatation of the Esophagus 297
SOCIETY PROCEEDINGS:
County Societies:
Ashland-Bayfield-Iron 205
Barron P. W. S. B...95, 205, 351, 485, 644
Brown-Kewaunee 205, 307, 538
Chippewa 435
Clark 253, 351
Dane 43, 95, 485, 538, 588
Dunn-Pepin 485
Eau Claire 95, 307
Fond du Lac.....43, 149, 351, 435, 644
Grant 205, 253, 485
Jefferson 95, 253
Kenosha 43, 351, 435, 538
La Crosse 538
Langlade 307, 435
Manitowoc 485
Marathon 43
Marinette-Florence 485, 588
Milwaukee 43, 253, 351, 435, 538
Monroe 95, 205, 436
Ontagamie 44, 253, 307, 436
Price-Taylor 254
Racine 95, 352, 436
Rock 95, 149, 254, 436, 644
Shawano 436
Sheboygan 539
St. Croix 436
Walworth 149, 205, 436, 539, 588
Waukesha 44, 485, 539
Miscellaneous Societies:
Duluth-Superior Academy of Medicine 149
Fox River Valley Medical.....95, 644
Milwaukee Academy of Medicine..588, 644
Milwaukee Medical ..43, 253, 307, 351, 435
Ninth Councilor District 149, 253, 485
University of Wisconsin Medical..... 644
West Wisconsin District Medical ...352
Wisconsin Surgical Association 588
Surgery of Infantile Paralysis, The 555
Symposium on Cancer (see Cancer)..... 599
Syphilis with a New Arsenical, The Treatment of Central Nervous System 336
Tables of Fees, Bureau of War Risk Insurance 288

Page
Taylor, J. G., Empyema Following Pneumonia in Infant of Four Months..... 136
Thompson, I. F., Cancer Week Program State of Wisconsin 532
Thyroidectomies, Local Anesthesia in... 14
Tonsillectomy, The After-Care in 328
Transactions of the 75th Annual Meeting of the State Medical Society of Wisconsin—Officers 361
Treasurer's Report 380
Tri-State District Medical Association, Program 254
Tuberculosis Treated with Radium, A Case of Peritoneal 141
Tuberculosis, X-Ray Examination of the Chest and an X-Ray Classification of Pulmonary, ... 49
Tucker, W. J., Uremia Following Gastro-Enterostomy—Eight Cases 528
Tucker, W. J., Infections of the Kidney 277
Tumors of the Breast from the Standpoint of the General Practitioner and the General Surgeon 460
Turck, Fenton B., Metabolic Diseases Caused by Tissue Extract, (Cytost).... 271
Typhoid Fever in Wisconsin During the Year 1921, Factors Responsible for the Increase of 345
Typhoid Fever, Water as a Factor in the Spread of 531
University of Wisconsin Medical Society Meeting, March 8, 1922, ... 580
Uremia Following Gastro-Enterostomy—Eight Cases 528
Ureterolithotomy Followed by a Rare Post-Operative Complication 138
Wadey, B. J., Obstetrics in Rural Communities 285
Warfield, Louis M., The Use of Stimulants in Pneumonia 1
Water as a Factor in the Spread of Typhoid Fever 531
Water Balance, Diabetes Insipidus and Water Intoxication 426
Water, Pure 89
Workmen's Compensation Act and the Doctors, The 197
Washburn, W. H., Medical Practice in Wisconsin 324
X-Ray Examination of the Chest and X-Ray Classification of Pulmonary Tuberculosis 49
Yates, J. L., Cancer of the Breast..... 607
Yates, J. L., Physiologic Rationale for Intrathoracic Surgery 510

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ORIGINAL ARTICLES

THE USE OF STIMULANTS IN PNEUMONIA.*

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Recently (1918) F. C. Shattuck and C. H. Lawrence[1] compared records of 1,000 cases of pneumonia treated at the Massachusetts General Hospital from 1822-1889 and 3,291 cases from 1889-1917. They found that the death rate by decades for all patients has shown practically no rise since 1889. During the past seven years there has been a slight decline, caused probably by the steadily increasing numbers of young foreigners among whom the death rate is low.

Treatment has done nothing toward diminishing the mortality in the past 95 years. Habitual use of alcohol diminishes the chances for recovery. The mortality of those given large doses of alcohol were no higher than those given no alcohol. Their figures do not indicate that alcohol is actually harmful to those sick with pneumonia—it is not poisonous to those who have high temperatures and are taking insufficient nourishment.

It is unfair to compare statistics of mortality at Municipal Hospitals, Private Hospitals and in private homes. The large free hospitals receive patients in all stages of the disease, often taking them from filthy surroundings, often transporting them for from three to twenty miles (as in our institution) and often receiving moribund patients who die within a few hours of admission. The mortality of the free hospitals is naturally high. In the Milwaukee County Hospital, for example, there were 663 cases of labor pneumonia from 1911 to July, 1920. Among these 303 died, a mortality of 45.7%. This is high, but includes all cases whether dying enroute or shortly after admission and including also all complications such as empyema and pericarditis. These cases, unfortunately, were not typed for the strains of infecting pneumococci.

In sharp contrast to this high mortality among the down-and-outers who form a large part of our hospital population in pneumonia, are the figures given by Stone, Phillips and Bliss[2] for 871 young men at Fort Riley, Kansas. No more favorable conditions could have been obtained. All young, picked men, all hospitalized at once. Of the 668 cases of lobar pneumonia in this select group of men there were 23 per cent deaths including 87 deaths complicated by empyema. In uncomplicated cases the mortality was 12.7 per cent. In uncomplicated pneumonia following measles the mortality was 32.5 per cent. When complicated by empyema the mortality was 45.8 per cent. In the great pandemic of influenza complicated by pneumonia which swept the country in the fall of 1918 the mortality varied from 32 per cent to 65 per cent in the various camps.

Three main types have been separated and a fourth is added in which are placed several strains, up to the present time impossible to classify. These strains are called Types 1, II, III, IV. In respect to the mortality resulting from infection, the sequence is IV, I, II, III, with the Type IV the least fatal and Type III the most fatal.

The incidence of these infections at the Hospital of the Rockefeller Institute where the typing was first carefully worked out was as follows in 454 cases:

Type I. .....151 cases....33.26 per cent.
Type II. .....152 cases....33.27 per cent.
Type III. .... 59 cases....12.94 per cent.
Type IV. ..... 92 cases....20.26 per cent.

Among a group of 108 cases at the same hospital the mortality in the four groups was:

Type I. ..28 cases...7 deaths, 25 per cent.
Type II. .25 cases...9 deaths, 36 per cent.

*Read in Symposium on Pneumonia at the 74th Annual Meeting, Wisconsin State Medical Society, La Crosse, Sept. 8-10, 1920.

[1]Boston Med. & Surg. Jour. 178:245, Feb. 21, 1918.

[2]Stone, W. J., Phillips, W. S. and Bliss, W. B., A Clinical Study of Pneumonia Based on 871 Cases. Arch. Int. Med., 22:409, Oct. '18.

Type III. .17 cases..8 deaths, 47 per cent.
Type IV. .33 cases...2 deaths, 6 per cent.

At the Pennsylvania Hospital in Philadelphia the mortality was 29, 27, 67, 11 for the four groups respectively. The average of the Rockefeller is 28.5 per cent, of the Pennsylvania 33.5%.

In a disease such as lobar pneumonia which is a self-limited infection the evaluation of any mode of therapy becomes an almost impossible matter. One day and two day pneumonias occur. A crisis may occur spontaneously at any day of the disease, consequently one must carefully study a large series with adequate controls in order to draw any useful conclusions. This opportunity happens only to those in large hospitals and there the worst types of cases are encountered. There can be no doubt that pneumonia among the clean, healthy young people in private practice is a less fatal disease than among the dirty, ill-conditioned populace which goes to a large free hospital. There are doctors who swear by one form of stimulating treatment and claim a low death rate. Equally as honest doctors practising an entirely different method obtain equally favorable results. There are many different formulae to cure pneumonia. Therefore there is no one formula and the patient himself is forced to do most of his own cure.

The dramatic favorable ending of the pneumonic process has attracted many investigators to work out the mechanism of the sudden transition from desperate illness to convalescence with no change in physical signs.

Recent work by Lord[3] has shown that the pressed juice of the pneumonic lung at necropsy has a higher acidity (H-ion concentration) than that of other tissues in the body. Further, cellular material obtained from the lung in the stage of red or gray hepatization contains a proteolytic enzyme acting on coagulated blood serum at an H-ion concentration of 7.3 to 6.7 inclusive and inactive in more acid concentrations. A further peptone-splitting enzyme is found operative at an H-ion concentration of 8.0 to 4.8 (that is weakly alkaline to strongly acid). These two enzymes digest the exudate to amino-acids which are then capable of being absorbed. Moreover, the pneumococcus cannot survive in an acidity represented by an H-ion concentration of 5.1. The pneumonic lung is also somewhat isolated from the rest of the circulation so that when the acidity in the lung reaches a certain point the pneumococci are killed and the enzymes digest the exudate. Both humoral immunity and local biochemical changes seem to be involved.

Thomas and Parker[4] find as a result of lung punctures that the pneumococci are not all killed even at the crisis but may be killed several days before or after the crisis therefore the death of pneumococci is not the factor which causes or initiates crisis:

We still seek an adequate explanation of the recovery in lobar pneumonia.

It is generally held that death is due either to toxemia or to cardiac failure. The latter is the result of toxemia. Certainly it is not due to actual lack of oxygen or of breathing space, for after a crisis there is just as little breathing space and just as much oxygen inhaled as during the height of the disease.

The indications for stimulation are then to combat the toxemia and to support the failing heart and to stimulate the respiratory center.

Everyone has his own method. Pupils of all the great clinicians follow more or less the teachings of their masters. There is no one sure method and hence protagonists are apt to fight to the last ditch for their special methods. It is useless, therefore, to outline methods of stimulation. What is said here are the author's own ideas developed after rather a wide experience in handling pneumonia largely in hospital practice.

In the first place I prefer to give no stimulants at any time during the course of the disease. The large percentage of cases need no stimulation.

My preference is for strychnine in doses of 1/20 1/15 grain hypodermically every three or four hours. I do use morphine freely. To ease pain is the physician's duty. A stabbing pain and a racking cough strain the heart as well, so morphine is thus vicariously (if not actually) a cardiac stimulant. Both pituitrin and adrenalin (epinephrin) I use intramuscularly and feel that both are efficacious, the former especially when there is abdominal distension. In adults I never felt that camphor was of any benefit. In children, on the contrary, I use it freely. Nitroglycerin, I do not

[3]Lord, F. T., Trans. Assoc. Amer. Phys., 35:85, 1919.

[4]Thomas and Parker, Arch. Int. Med., 26:125, July, 1920.

use. Digitalis, I rarely use. If I feel sure that the cyanosis and heart failure are due to decompensating heart, I have given 1 c. c. (15 minims) of tincture intravenously. If it is to be effective it must be given in that manner. Fifteen to twenty minims (30-40 drops) given by mouth are not absorbed in sufficient quantity to act within a few hours. I am firmly convinced that any improvement coming after the administration of a small dose of digitalis by mouth is not due to the drug but to factors of which we know little such as the humoral and biochemical forces at work in the body.

This question of digitalis in pneumonia is a controversial subject in which there are impressions but little actual proof based upon carefully studied facts.

Stone[2] et al believed in digitalizing every patient on admission with the idea of preventing heart failure. Naturally, not all patients have heart failure, so that many men were given digitalis who did not need it. They felt that it was of distinct use. Thus in their predigitalis period, Oct. 18, 1917, to Jan. 15, 1918, the mortality was 25.8 per cent. In the digitalis period from Jan. 15, 1918, to May 18, 1918, the mortality was 11.8 per cent. They gave from 20 c. c. to 30 c. c., depending upon body weight, of a standardized tincture by mouth in divided doses of 2 c. c. to 4 c. c. every four hours.

In the series of cases reported by Brem[5] et al from Camp Fremont, Calif., during the influenzal pneumonia epidemic, no digitalis was used.

T. S. Hart[6] maintains that in the bronchopneumonias which complicated influenza, the heart was not much affected. Many reports from various men on the state of the heart after death attest this. The patients were overwhelmed by a toxemia and only at the very end did the heart play out. He gave digitalis (tincture) to the patients from the beginning of pneumonia and proved digitalization of the hearts by electrocardiographic records. His work is the most carefully controlled research I have found. His conclusions are interesting and important.

He could not show any difference in the course of the disease in the digitalized and nondigitalized patients. The hearts of those patients treated without digitalis and those to whom it was given behaved in a similar manner, except that the electrocardiograms of those receiving digitalis showed the characteristic changes (these are prolongation of P-R interval, changes in contour of the T-wave, and partial auriculo-ventricular block.)

He found no evidence that digitalis influenced the blood pressure.

It must be admitted that Stone was treating lobar pneumonia for the most part, while Hart was treating the influenzal pneumonias. It must, however, not be overlooked that Stone digitalized the patients in the latter part of the epidemic, when the cases were on the wane and virulence was not so great as in the earlier periods. As I said above, it is difficult to prove the usefulness of a drug like digitalis in a self-limited disease like pneumonia.

Alcohol in the form of whiskey, brandy, wine, etc., I have not given for years. During the ten years I have been in charge of the Milwaukee County Hospital, whiskey is rarely given. In an old toper, pickled in alcohol, it has been administered. I do not believe it is a stimulant in any sense of the word. As a food, it is far inferior and more harmful than cereals and milk. I cannot see one scintilla of evidence for the use of alcohol in fevers as a stimulant.

Have we any drugs to stimulate the respiration? Atropine is said to be one but it has never seemed to work for me. When the patient's respiratory center is so badly damaged that carbondioxide, the normal excitant, will not stimulate it, no amount of atropine in my hands has ever helped.

Much was hoped for from sodium cyanide, a drug developed by Loevenhart. It does stimulate the respiratory center in experimental animals, but a limited use of it in my wards has not revealed any special stimulating effects upon human beings desperately ill with pneumonia. It would appear then that I do not believe that stimulants help much in the treatment of lobar pneumonia. That is a fair inference and I admit it. Bear in mind that I am not speaking of the general treatment of pneumonia. I wish to forestall the

[5]Brem, W. V., Bolling, G. E., Casper, E. J., Pandemic "Influenza" and Secondary Pneumonia at Camp Fremont, Cal. J. A. M. A. 71:238, Dec. 28, '18.

[6]Hart, T. S. The Heart in Bronchopneumonia: Observations on the Activity of the Heart and Its Response to Digitalis Made During the Recent Epidemic. Amer. Jour. Med. Sc., 158:649, Nov. '19.

charge of therapeutic nihilism which may be placed against me.

In young people 80 to 90 per cent of pneumonia cases recover in spite of, not because of what is done. In two to four per cent roughly, one feels that he has been instrumental in pulling the desperately ill through by means of stimulation. That is something to which one may point with a satisfied feeling.

In the bronchopneumonia cases occurring with the influenza pandemic, I was convinced that digitalis was of no special use. The best results, I obtained with strychnine in large doses (gr. 1/20 to 1/15 hypodermically every two to four hours. At my suggestion, a number of practitioners in St. Louis, Mo., (near Jefferson Barracks where I was stationed) used this stimulation with good results. Several of the profession in Milwaukee also used these large doses in the civilian population during the spring of 1919.

Finally, I believe in holding back with stimulants until they become necessary, then I believe in using them in large doses.

THE SURGICAL TREATMENT OF EMPYEMA COMPLICATING PNEUMONIA.*

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To treat Empyema, which complicates pneumonia, rationally, there are several important factors which must be considered. These factors are particularly, the anatomy of the chest cavity; the mechanics of respiration; the bacteriology of the particular variety of empyema we are treating with its pathology and pathogenesis.

From our knowledge of anantomy, we know there are no firm or immovable partitions separating the different compartments of the chest cavity. While the mediastinum gives a definite partition of separation of one compartment from another, it is mobile and its position may be much varied. As a result of this mobility in the normal individual, the two sides of the chest cavity are practically as one, as far as resistance by the mediastinum is concerned. Graham and Bell (1) have demonstrated that the difference in pressure of the two sides of the normal chest cavity possible, as exerted by the normal mediastinum, is the equivalent of but 0.4 to 0.8 millimeters of mercury.

Graham (2) has demonstrated that there is no difference in the amount of resistance given, immediately after death, by the normal mediastinum in man and that of the dog, and from the experiments on the living dog, which is reasonable to believe are practically the same in man.

"An open pneumothorax on one side would produce practically an equal amount of compression of both lungs, and that the prevalent conception of the collapse of one lung with the maintenance of respiration by the other must be incorrect."

The extreme mobility of the normal human mediastinum has been shown in X-ray studies by Stivelmann and Rosenblatt (3). The conclusions from these experiments and studies confirm the belief that there is practically an equal pressure throughout the normal thorax. A pneumothorax in a normal chest, which produces unusual compression of one lung, will likewise produce a similar compression of the opposite lung and life cannot be sustained. The danger of death depends upon the size of the opening or openings in the chest wall and the amount of pneumothorax, whether it be either in one or in both pleural cavities.

Graham (2) states that the danger of death depends upon the "vital capacity" and that "it makes practically no difference whether the opening is unilateral or bilateral, provided the combined area of the openings does not exceed the caluculated amount for the limits of safety." Experiments show that the average "vital capacity" (3,700 cubic centimeters) will admit of an opening with an area of a little more than eight square inches.

With a diseased condition within the chest cavity, where there is an increased resistance to the mediastinum due to inflammation, adhesions or immobility of adjacent parts, which modify the normal relations of pressure, there may be a much larger exposure, if, of but one lung, than in the normal chest.

In treating empyema by operative procedure, to obtain the best results, we must consider the mechanics of respiration.

If we consider the normal chest cavity with its firm chest walls so constructed as to increase the

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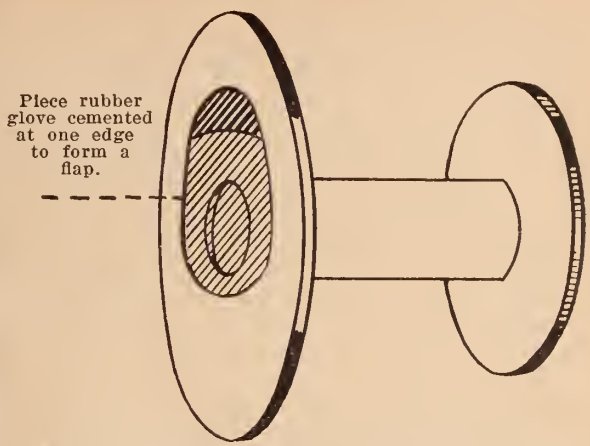
size of the chest cavity with each inspiration and to diminish the size of this cavity with each expiration and add to this the result of the different contractions of the diaphram during inspiration and expiration, you may readily imagine the bellows effect on the distended elastic lining of this cavity. As the air is drawn in and forced out through the trachea, the lining of this cavity is in effect, the walls of the alveolar spaces of the lungs. With an opening or openings in the chest wall, part of this force will be exerted in forcing the air in and out of the pleural cavity, depending upon the size of the exposure, practically lessened only by the cohesive force between the parietal and visceral pleura. An operation, which will admit of the out flow of fluid from the pleural cavity and not interfere with the normal mechanics of respiration, is one desired. A suction apparatus, if immediately applied, accomplishes this result fairly well, but you all probably know from experience that such an apparatus is, even in a non-delirious patient, very difficult and also fatiguing to the patient, to keep in place and order.

For several years I have been using a modified Wilson's Empyema Drainage Tube. These tubes are made from short pieces of drainage tubing with flanges vulcanized to each end, with the inner flange the smaller in diameter. The length of the tube used is chosen according to the thickness of the chest wall, and the flanges being flat, fit snugly to the two sides of the chest wall, the inner to the parietal pleura and the outer to the skin. To prevent pneumothorax, a small piece of dental rubber dam or a piece of rubber glove is cemented to the outer flange so as to form a flap over the outer end of the tube. When the tube is fitted in this manner, it acts as a valve, allowing the discharge exit, but prevents the entrance of air. (See Fig.)

Several years ago, while operating for empyema, as the pus flowed out, and as the cavity became fairly well drained, pneumothorax formed by the entrance of air, with increasing pressure on each inspiration. The respiration of the patient, I noticed, became much embarrassed, shown by the sudden appearance of cyanosis and the rapid increase of the heart action. Excluding the entrance of air by placing a pledget of gauze or the finger over the opening in the chest wall, there was an immediate improvement in the patient's condi-



Wilson's Empyema Drainage-Tube modified with soft rubber flap over outer end.

View of outer end of tube with flap in position.

tion. I therefore, improvised a valve by stitching a piece of rubber glove over the outer opening of a Wilson's empyema tube and after introducing this modified tube, applied loose gauze dressings, with the result that since that time, I have employed the Wilson's Empyema Tube, with this modification, with gratifying results.

The advantages of this tube, as modified, allows the fluid to escape with its contained toxines, and relieves the mechanical embarrassment caused by the pressure of the fluid; it prevents the formation of a pneumothorax, sustains the continuity of the chest wall during inspiration, and thereby does not interfere with the normal mechanics of respiration. As the fluid is forced out at each expiration, the alveolar spaces fill with air and the lung not only does not collapse, but gradually expands to replace the space previously occupied by the fluid.

During the recent epidemic of pneumonia with empyema complicating, our experience and the reports in endless numbers, tell us that the bacteriology of the chest fluid means much in our

estimating the seriousness, morbidity and the treatment of the particular case in question.

For study and improvement in our knowledge and methods of treatment, it is necessary to know something of the variety of infection, whether one type or another of pneumococcus, whether streptococcus, streptococcus haemolyticus or other, or if not pure cultures, the predominant type and not only the variety, but the degree of virulence of the variety.

We have learned of the virulence or lack of resistance of the host to one variety at one period of the epidemic, with an entirely different virulence of the same variety at another period.

We are lead to believe by many students and authorities on this subject, that these conditions may modify surgical intervention as being either meddlesome or proper.

The consensus of opinion of the Empyema Commission—(1), (2), (4)—seem to conclude that with the streptococcus haemolytic variety of infection, it is preferable to wait until the pneumonia is well over, the toxemia subsided and the general condition improved before thoracotomy or other operation, unless simple aspiration, is advisable. As is stated by Moschowitz (4), at this time there is nothing to contend with but the empyema with its toxic effects from absorption, and the mechanical effect of the fluid. While in the early stage of the pneumonia, with the increased amount of exudate and severe toxemia and the patient in a generally critical condition a thoracotomy with sudden escape of fluid, and with an *equally sudden inrush of air,* followed by an immediate collapse of the lung, the patients died, not only in large numbers, but promptly after the operation.

I do not believe these conclusions well founded. If a patient seems likely to die because of the intense toxemia, the greater source of which is from the pleural surfaces, it would seem rational to evacuate it without regard to the stage of the disease, and, too, with the respiration and heart action greatly embarrassed from the presence of a large amount of fluid; with a patient hardly able to get enough air to exist; it is certainly perfectly proper to relieve that pressure at any stage of the disease, and especially when it can be done where the sudden inrush of air, followed by an immediate collapse of the lungs is prevented by the use of this tube which I have shown.

The high mortality in many army camps, following a costectomy for empyema may partially be accounted for by the method of assignment of these cases. As is stated by Van Sweringen (5) while he was Chief of the Surgical Service Base Hospital, Camp Joseph E. Johnston, and General Hospital No. 25, "a soldier with pneumonia running a more or less stormy course. About the time the temperature reached normal, there might be a sudden rise with aggravation of the other symptoms and the physical signs of fluid in the pleural cavity would appear, aspiration would be done, and repeated while he was on the medical service, until the fluid was macroscopic pus, when he was sent to the surgical service. If he died while still in the medical service, his death was recorded as due to pneumonia. But if he died ever so shortly after a rib resection, his death was due to empyema." As he states, with a virulent infection, with an early exudate which consisted of bloody pus, with cultures showing a predominance of haemolytic streptococcus, there could be no doubt about its extreme toxicity. If a simple thoracotomy was done on this class of cases, most of them would die and the operation was credited as contributing to the fatal termination. Whereas, if they were left alone to struggle against the toxine, absorbed from a large absorbing surface, they would surely have died. He did not see a death in these cases which he thought was caused, or contributed to, by the operation, and further states that though the statistics improved after a halt was called on early operations in these cases, it is not admitted that fewer died from the affection. "When one refuses to operate upon any but the late cases, he allows a certain number of the acute cases to die that might have stood a chance with drainage."

Dr. Joseph L. Miller, Major M. C. U. S. Army, stationed at Camp Dodge, Iowa, says:

> "It would appear that streptococcus empyemas might be divided into three groups: (1) those who die early, no matter what form of treatment is instituted, from acute toxemia; (2) those with multiple pus foci; difficult to locate and drain all foci; these all die, and (3) those who usually recover, either from early operation or aspiration followed by operation; here are included those with moderate toxemia and those with localized pus accessible to drainage."

The hitherto commonly accepted views as to the pathogenesis of empyema being due to the infection of the pleura and pleural cavity by contiguity from the inflamed lung, does not seem plausible, any more than we would expect to find a general peritonitis from an inflamed appendix. We know from our frequent experience with the appendix that we do not commonly get a general peritonitis, unless there is perforation or that the wall of the appendix has become so necrosed as to allow easy egress of bacteria into the general peritoneal cavity. Moschowitz (4) states that at many of the autopsies at Camp Lee it was demonstrated that subpleural abscesses frequently existed, and in many cases one or more had perforated into the pleural cavity. Also, at Camp McCellan during the influenza epidemic, Lt. Colonel E. K. Dunham, who was a member of the Empyema Commission, demonstrated a perforated subpleural abscess in every case of empyema that came to autopsy. These abscesses, though subpleural at the time of rupture, it would seem reasonable, might be much more deeply seated in the lung at an earlier period of the disease.

If the empyema is localized, its location will depend upon the location of the ruptured abscess or abscesses. The abscesses are usually found upon the convex surface of the lung, though they may be interlobular, post sternal, on the mesial surfaces of the lung, at the apeces, in fact on any surface of either lobe of either lung depending upon the location of the pneumonia and the original area or areas of necrosis or abscess formation.

Empyema, complicating pneumonia, may be divided into four different stages, viz.:

The first stage, or the period when there is a serious pleurisy. It might be called the pre-empyema stage. At this time there has been no rupture of an abscess or penetration of infection from the necrotic lung into the pleural cavity. This condition is probably present in all cases of pneumonia, at least in those cases with the inflammatory condition near the visceral pleura of the lung or where there is a necrosis present, but the infection not yet penetrated. If there is no abscess, rupture nor infection otherwise of this serous fluid, it usually will absorb without aspiration or operation.

The Second Stage, or period which occurs after rupture of the abscess or penetration of infection through necrotic tissue. At this time there is a considerable exudation of sero-purulent material and usually rapidly increases in amount, with marked symptoms, indicating extending infection and toxemia. The amount and rapidity of the formation of this sero-purulent exudate and the toxicity depends upon the variety of the infecting organism and the resistance of the individual to the particular organism.

Aspiration in the early part of this stage will relieve, at least temporarily, the effects of compression of the diseased lung, the compression of the opposite lung, and the pressure upon, and the displacement of, the heart. In some cases aspiration may even effect a cure by removing the toxic material, and in that way aiding the system to overcome the infecting organism. Usually a simple thoracotomy, with local anaesthesia, is the operation of choice. For this operation you will find the Modified Wilson's Empyema Drainage Tube very effective, and because of the small incision and small opening necessary, it is easily placed with a local or a short general anaesthetic, producing but little, if any shock, but adding much to the comfort and ease of the patient by relieving the pressure and displacement of the thoracic viscera and by lessening the embarrassment of the respiration, to say nothing of the advantage of the elimination of the toxic material. When the rupture of an abscess is one in communication with a large bronchus and there is produced a hydro-pyo-pneumothorax, and there is a continuous escape of air producing great intra thoracic tension, a thoracotomy becomes urgent.

The Third Stage is when there is fibro-purulent pus, sometimes called "frank pus" or "macroscopic pus."

At this stage the empyèma, in whatever portion of the pleural cavity, is encapsulated. The abscess is limited by pleuritic adhesions, whether single or multiple.

When the patient has survived until this stage, there has been either or both, a moderate toxicity or an increased resistance of the individual. We now find the pneumonia terminated and the toxemia subsiding, with the general condition of the patient much improved.

At this stage, an operation may be undertaken with more impunity and the treatment may be more radical. The location of the abscess is determined and the site for operating is chosen

which is the most suitable for efficient drainage. The site most commonly chosen, for the supra diaphragmatic and posterior portions of the chest, is over the 8th or 9th rib in the post axillary line. The idea is to get as dependent a position as possible, as the patient, with favorable prognosis, will be in a varied position from that of recumbent to a sitting position most of the time, from this stage on.

A large modified Wilson's tube is usually very efficient for operation at this stage, as it allows the fluid to flow out and by preventing a pneumothorax, allows the inspiration to exert an expanding influence on the lung. If the exit becomes plugged by fibrous clots, they are easily removed with a pair of tissue forceps, or a small amount of Dakin's solution might be introduced to liquify the pus, and in the absence of a bronchial fistula, irrigation with Dakin's solution, may be of advantage, if irrigation of a purulent visceral cavity is ever to an advantage to the patient. When this tube is in place, each expiration exerts an expelling force upon the fluid in the pleural cavity so there is usually little difficulty in accomplishing drainage as long as any pus forms, or there is any fluid remaining. If pockets have formed, determined by X-ray or otherwise, a costectomy should be performed and these pockets opened and drained, independent of the main cavity, unless they are easily accessible from the main cavity.

For the drainage of cavities reached post sternally, McKenna (7) advises the resection of about 3½″ of the fourth rib and retraction so that the finger may be slipped over the anterior border of the lung and from here have command of most any portion of the mediastinal area.

The Fourth Stage, or Chronic Empyema, is the rather rare condition in which the third stage does not respond even to continued treatment. This condition may result from one of the following reasons, viz.:

1. When the drainage opening has not been properly placed.

2. When the opening has been allowed to close before the cavity has become sufficiently sterile for the system to overcome the remaining infection.

3. When there remains an osteomyelitis of the rib which will not permit closure, or if the fistula does close over, there is a recurrence.

4. When by accident or otherwise, there remains a foreign particle within the cavity.

5. When there is a markedly contracted lung with a large cavity exposed to the air, which continues to drain a purulent secretion, or there are side pockets from this cavity which do not properly drain.

6. When there is a patulous *pleuro-pulmonary* or a *pulmonary-pleuro-cutaneous fistula.*

It can be readily seen that the most important treatment of the fourth stage is the prophylactic treatment.

To avoid the first condition of this stage, it is necessary to have the drainage placed in the most dependent position.

To avoid the second condition, it is a matter of keeping the drainage continued for a longer time than is really necessary, rather than allowing the opening to close before the cavity has become sufficiently sterile.

To avoid the third condition, or that of a remaining necrotic rib, the evident treatment is the removal of the offending part.

For the treatment of the fourth condition, or that of a remaining foreign particle, before closure can be accomplished, this object must be removed.

For the treatment of the fifth condition, or that of a markedly contracted lung, with a large cavity remaining exposed to the air, there are several formidable major thoro-plastic operations which have been employed. This is a serious condition, which should rarely occur, for when it does occur, it usually means we have been inefficient in our previous treatment, but in spite of our best efforts, this condition does occur.

The operations which have been previously much employed for the treatment of this condition, aim to obliterate the empyema cavity by collapsing the chest wall, notable the Esthander's operation and the Schede's operation.

The operation most used of late is a decortication of the lung, which aims at a re-expansion of the lung, by freeing it from the fibrous membrane which binds it in a contracted position, and is the principal of the operations devised by Delorme, Fowler and Lilienthal.

Depending upon the varying conditions present, one method may be more appropriate than another. In any case and with either method, the operation is a formidable one with a considerable

mortality, which varies from 15 to 25 per cent and the cures after operation vary from 50 to 60 per cent.

CONCLUSIONS.

In treating empyema surgically, it is well to remember that:

I. The anatomy of the normal chest is such that an open pneumothorax of one pleural cavity exerts practically an equal compression of both lungs, and that we cannot have complete collapse of one lung, and the maintenance of respiration by the opposite lung, unless there are firm adhesions of the mediastinum to protect the functionating lung.

II. That unless the mediastinum is immobilized, it makes practically no difference whether there is an opening in one or both pleural cavities, and that there is a working ratio according to the vital capacity of the individual, which in the average normal individual will permit a single or a combined opening of about eight square inches, whether in one or both pleural cavities. The size of the exposure may be modified by partial or complete immobilization of the mediastinum.

III. In treating empyema it is well to know the bacteriology of the infecting organism with which we are dealing.

IV. That infection with the streptococcus haemolyticus is the most virulent form of infection.

V. That the use of the Wilson's Emypema tube, modified as I have shown, is desirable for the following reasons:

1. It accomplishes drainage and relieves the patient at once from the embarrassment caused by the presence of the fluid and the absorption of the toxines contained therein.

2. It prevents pneumothorax.

3. It permits the continuance of the normal mechanics of respiration, and in this way produces a constant expanding force upon the lung to replace the space previously occupied by the fluid, and also tends to prevent the formation of a membrane which would keep the lung in a compressed condition.

4. It favors the expulsion of fluid from the pleural cavity at each act of expiration.

5. It is easily placed.

6. Its simplicity allows the patient to be in a sitting position or out of bed as soon as there has been sufficient recovery of the general strength.

VI. More efficient treatment of the earlier stages of empyema will lessen the mortality, increase the comfort of the patient, lessen the liability of a chronic condition and thereby avoid a formidable thoroplastic operation.

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CHAULMOOGRA OIL AND TUBERCULOSIS.

The recent widely circulated statement that the U. S. Public Health had found that chaulmoogra oil was as efficacious in the treatment of tuberculosis, as it had been shown to be in that of leprosy, is said by Surgeon General Cumming to be unwarranted. Experiments made some years ago with the oil gave no definite results. Recent experiments with the ester, or derivatives, have been begun because of hopes based on some similarities between the bacilli of leprosy and those of tuberculosis; but these have not proceeded far enough to indicate what results will be obtained.

THE PATHOLOGY OF THE PNEUMONIAS FOUND IN THE RECENT EPIDEMICS OF INFLUENZA.*

BY DRS. DANIEL HOPKINSON AND E. L. THARINGER.

MILWAUKEE.

The pathological findings in the respiratory organs of the pneumonias, which accompanied and were the most frequent cause of a fatal issue in the epidemic of influenza, which became pandemic in 1918, presented a picture anatomically which was so characteristic, as to be almost conclusive evidence of its association with this prevailing disease, to the exclusion of inflammatory processes of the lungs from other bacterial causes.

In the subsequent recurrent epidemics however, the anatomic pathological changes were extremely variable, the pneumonias conforming to no particular anatomic type, differing greatly in the associated conditions and also varying widely in the involvement of pleura and cardio-vascular system. This variation was apparently dependent on the invasion by secondary organisms imposed upon respiratory tissue already changed by the action of the influenzal organism. These secondary organisms were usually present in various combinations. Such combination making it almost impossible to classify anatomically according to the organisms present.

The constant presence of different bacteria possessing special characteristics, when associated with influenza of the recurrent type, has led to a wide variation in the reports of pathological changes.

1. Park. In certain localities now and then however, the association with a given organism, staphylococcus, commonly resulted in a suppurative type of inflammation with abcess formation. While uniformity of findings is characteristic of the early pandemic, the multiform lesions of the recurrent type necessitates a more or less classification into groups in order to cover this wide variation. In the early epidemic the prevailing form of lung lesion was hemmorrhagic, confluent, lobular or broncho-pneumonia which occurred in both lungs. This pneumonia in about 50% of the cases developed relatively early in the disease, i. e. in the first few days.

Quite characteristic is the distribution on the posterior surface and the involvement of the upper as frequently as the lower lobes. The lungs are increased in volume and weight.

2. Le Count found that the ratio of lung weight to body weight was similar to that found in croupous-pneumonia. Upon section the cut surface of the lung is wet and there exudes upon pressure a large amount of a blood stained foamy fluid. J. A. M. A. No. 3, May 8, 1920. Le Count found this blood tinged exudate is quite characteristic, and is the result of an associated pulmonary oedema which Klein considers a great factor in the rapid dissemination of the inflammatory process throughout the lung; which in the absence of this oedema results in the lesion remaining more or less localized around the bronchial branches in the peri-bronchial and peri-bronchioles, the lung much less quantitatively involved, which according to Klein may explain the longer duration and decrease in the number of fatal cases as compared with the confluent type. This blood tinged foamy fluid is found in the trachea and larynx, and post-mortem frequently pours out of the nose and mouth. The pleural surface is often raised by an accumulated subpleural oedma and distention of the hymph vessels, particularly at the bottom of the inter lobar clefts. The consistency varies, but is usually increased in the posterior portion of the lobes where areas of solidfication varying greatly in size and color, are usually found.

These areas are most commonly not sharply outlined but gradually merge into a surrounding deeply congested zone. The merging of one area into another results in the confluent type, often presenting a false lobar pneumonia appearance, frequently an entire lobe being involved; but true lobar pneumonia of the croupous type is rare. Areas of atolectasis, varying in size, and sometimes covering a large portion may follow obstruction of bronchial tubes by the exudate.

The plugs of fibrin and cellular exudate so commonly found in lobar pneumonia and broncho-pneumonia not of influenzal type are characteristically absent in most of these cases. Le Count points out that often the total amount of true solidification is small, as shown by distention of

*Read in Symposium on Pneumonia at the 74th Annual Meeting of the State Medical Society of Wisconsin, La Crosse, Sept. 8-10, 1920.

the lungs with air which is followed by the distention of many apparently airless and semi-solid portions.

The areas of solidification are sometimes smooth and at other times granular; both may present themselves in the sections of the same lung and in adjoining areas. The color in the early stages is a deep dark red to a purplish red; later a motling occurs with the appearance of grayish areas in regions where necrotic changes have become more prominent. In the cases where a fatal issue occurs after the end of a week or more there is added to the above picture the various destructive changes characteristic of the action of invasion by secondary organism. These changes include varying degrees of destruction of the lung tissue and the transformation of the original hemmorrhagic type of inflammation into the suppurative type; with disseminated areas of softening, varying in color from a grayish to a yellowish with at times distinct abcess formation.

Pleura. The involvement of the pleura in the inflammatory process varied very greatly in extent, type and frequency; and those cases dying early in the first few days, there occured but slight formation of exudate and this of sero sanguinous type. Doug. Symmers, March 6, 1920, No. 5, J. A. M. A. The pleura apparently having escaped because death took place before it had time to react. Quite characteristic however was the presense of petechial hemmorrhages both within and immediately below the pleura. Later however pleural involvement was more marked and more frequent; but even in these cases the exudate was generally liquid and low in fibrin content. The fibrin deposited on the surface was small in amount; there being characteristically an absence of the yellowish fibrin deposit which so frequently presents itself in the cases of true lobar pneumonia. In the cases in which strepticocci are found the exudate often becomes purulent in type, this occuring as a late complication or sequel.

Bronchial Glands. The peribronchial lymph glands and the mediastinal tissues are usually edematous, congested, and present areas of hemmorrhage, the lymph glands are enlarged, consistency decreased, section moist, often presenting the escape of a blood tinged exudate similar to that exuding from the lung; the color is a reddish gray, small areas of hemmorrhage are usually recognizable on the cut surface.

The trachea and bronchi which early contain a large amount of bloody foamy exudate later shows the mucosa covered by a mucopurulent material. The mucous membrane is swollen, congested and the seat of an inflammatory process early of the hemmorrhagic type but which may later become purulent; those bronchi leading to the areas of the lung most involved frequently show more marked destructive changes; in the smaller bronchi the mucosa sometimes being almost entirely destroyed.

Microscopically, the lungs show great variation in the exudate content, and the walls of the air chambers. The lining epithelium is usually swollen and more or less exfoliation takes place; sometimes this epithelium reverts to the cuboidal type resembling the foetal cell. This change occurs in the cases that have run a more chronic course.

Vacuolization and nuclear changes often resulting in necrosis are common. The capillaries in the alveolar walls often contain hyaline thrombi. These vessels are usually distended with blood.

LeCount No. 6, J. A. M. A. May 4, 1920, has called attention to the desseminated necrosis of the pulmonary capillaries and alveolar lining; which he considers explanatory of the hemmorrhagic and edematous condition usually present. The walls of the alveoli show very little cellular infiltration.

The exudate within the alveoli show characteristically a large number of red cells and a precipitate of blood serum with varying amounts of fibrin. In those cases dying early this is very scanty, added to this are the exfoliated epithelial cells which when predominating give to the lesion a catarrhal, microscopic picture. Mononuclear white cells are usually present in varying numbers. Polymorphos are characteristically absent in the early case. In the later cases where the secondary invaders are apparently responsible for the predominating lesion, the exudate contains polymopho cells in large number, fibrin in greater amount and a decrease in the number of red cells and exfoliated epithelial cells. The exudate assuming that of the purulent type. Added to this are interstitial changes in the alveoli walls and distinct aggregations of polymorpho cells with local necrosis and liquifaction. (Abcess formation). This latter change is most frequently met with when the pneumonia has persisted for a length of time. Within the trachea and bronchi

the vessels frequently contain hyalin thrombii and the endothelium shows proliferative changes. The mucosa is covered by a muco-fibrinous exudate within which are polymorpho cells and exfoliated epithelium, some areas presenting an entire absence of the latter; the marked ulceration is rare. The mucous gland usually show mucoid degeneration and there are areas of hemmorrhage irregularly distributed throughout the sections. The lymph glands show the sinuses infiltrated with large mononuclear cells, red blood cells, and varying amount of fibrin and granular debris. The endothelium is greatly swollen and shows degenerative changes. The loosely arranged lymphoid tissue contains proliferating mono-nuclears and in the protracted cases, large numbers of plasma cells Polymorphos are characteristically absent and are usually only numerous when the adjacent lung changes are of the suppurative type.

Accompaning the above change in the respiratory organs the central nervous system usually shows an increase in cerebro-spinal fluid, hyperemia of the meningeal and cèrebral vessels; cerebral oedema hyaline Thrombi and petechial hemmorrhages.

The latter commonly within the medulla and pons, which raises the question as to the influence of the vaso motor system on the respiratory center; as many of these cases die with an asphyxia much more marked than can be accounted for by the extend of evident local lung involvement. The kidneys and liver show congestion and parenchymatous degeneration. Within the general vascular system there is found proliferation of the capillary endothelium and the formation of hyaline thrombi.

The heart shows subepicardial petechial hemmorrhages, the endocardium is usually blood stained, the myocardium shows evidence of parenchymatous degenerative changes which commonly accompany severe acute infections.

The spleen shows an excessive amount of blood in the splenic pulp; areas of hemmorrhage, and hyperplasia of the endothelial cells. The characteristic blood picture is a decrease in the number of white cells which are usually from 3,000 to 5,000 with a relative decrease in the amount of polymorphos. When the disease becomes prolonged this blood picture may change the number of whites increasing together with an increase in amount of polymorphos. Now and then there may be a slight leukocytosis throughout the disease in which case, this is usually associated with the development of a true lobar pneumonia.

The terminations of these forms of pneumonia include complete resolution; persistance as an unresolved interstitial inflammation, resulting in a general fibrosis; abcess formation often multiple; gangrene; and bronchi-ectasis. Within the pleura especially in those cases persisting for a length of time and also the recurrent types, empyema is not infrequent; this may be either diffuse, sacculated or interlobar. Pleural adhesions are the common results of the recurrent type and may cause various degrees of obliteration of the pleural cavity; with accompanying interference with lung excursion.

DISCUSSION.

Dr. H. B. Sears, Beaver Dam: Mr. Chairman, I should like to inquire, in those cases in which the resolution of the lung is exceedingly slow, as to what was the difference in pathology, and would also like to ask what others have found helpful in assisting this tardy resolution in the lung?

Dr. E. L. Tharinger, Milwaukee: Mr. President and Gentlemen: Dr. Warfield in his paper spoke of the conditions, or rather factors, that enter into the cure of the disease, and stated that the patient cures himself. The answer to a question as to why a pneumonia did not resolve immediately, or in due course of time, would be dependent simply upon the resistance, or the ability of the patient to take care of that infection.

The pathological changes resulting would, of course, be those that occur in a prolonged type. Instead of the pathological process resulting in speedy cure, you get the residual process, which is always an infiltration of either round cells or leukocytes, and particularly leukocytes, with either a fibrosis or an abscess formation, and I do not think that anybody can give the reason why that occurs. It is simply a lowered resistance on the part of the patient, or a more virulent organism.

Dr. Joseph Smith, Wausau: Mr. President and Gentlemen: There is another question that I should like to ask of Dr. Connell. I think we have all had the experience of having operated upon a pneumonia patient with a diagnosis of appendicitis, especially in children. But there is another condition that I have encountered on several occasions, particularly in children, in which there was no definite appendicitis, with distension of the bowels, with serous exudate in the abdominal cavity, and in which the symptoms of pneumonia did not follow; that is, in which the patient did not develop pneumonia after the operation; and I think, so far as I can remember, all of these cases have recovered. In other words, this is a condition which the mistaken diagnosis of appendicitis in pneumonia does not explain. These cases present the appearance of a mild, rather

general peritonitis with no demonstrable source of infection found within the abdomen. I should like to know if Dr. Connell has encountered that condition and will explain it.

Dr. F. Gregory Connell, Oshkosh: I have met with no cases of that type of disease. In my opening remarks I excluded the definite appendicitis cases. They should be treated the same as appendicitis due to any other cause, if the conditions warrant.

Dr. A. J. Patek, Milwaukee: Mr. President and Gentlemen: I think it was Mackenzie who said, "The more pneumonia I treat, the less I treat it." I am not a nihilist in the treatment of pneumonia, but I do think there is one drug from the use of which I have gotten perhaps better results, or at least results that have satisfied me better than Dr. Warfield has specified in the treatment of that disease, and that drug is digitalis. I am glad he called attention to the use of strychnine in large doses, because I have seen patients with physicians who believed they were giving adequate stimulation when they employed only immitesmal doses. I heartily support Dr. Warfield's dosage of 1/15 or 1/16 grain at frequent intervals, because only in doses of that size can one expect to get adequate stimulation. I am convinced that in certain cases of influenzal broncho-pneumonia I have gotten results from the use of digitalis which I would not have obtained without its use. I have in mind several cases at least 4 or 5, who were in the dreaded cyanotic stage, and who were tided over by the use of rather large doses of digitalis. My best results, I think, were obtained in a number of cases by the use of digitalis, not in the 1/100 of a grain hypodermic dose (the usual sized commercial tablet) but in one-tenth grain doses. I have given as much as one-tenth to one-twentieth grain every two hours, for a period of twelve to twenty hours, digitalizing the patient quickly, without other than a good result. One desperate but recovered case was that of a woman who had been confined about a week prior to my seeing her, and who had driven to Milwaukee from a distance of 30 miles. My experience makes me quite unwilling to concede that digitalis has no beneficial effect in some of the very severe forms and types of pneumonia, although I readily grant that in many cases of lobar pneumonia no stimulation is needed. I have not followed the practice as advocated by Dr. Neilson this morning, of giving digitalis in all cases of pneumonia from their very beginning, in order to forestall the disastrous effects of lobar pneumonia. It has been my practice to usually withhold digitalis until I felt that the use of some stimulant was indicated. I am aware that opinions differ widely on this point.

Dr. W. H. Neilson, Milwaukee: Mr. President and Gentlemen: I just want to suggest that those who use digitalis early in pneumonia do not have the severe pneumonias that we hear about. Digitalis, combined with an alkali given when the patient is even in pain, the second or third day, works well, and when visited the next day you find him breathing comparatively easy, and comparatively free of pain, and the temperature lowered. Usually the temperature then keeps at a level for a day or two, and then decreases, and you have the disease terminatingly lysis, instead of by crisis. I never see crises these days since I have adopted the practice of giving digitalis in the ordinary case of pneumonia. We have a gradual decrease of the temperature, and gradual decrease of the symptoms.

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THE HISTORY OF MEDICINE.

The background of the present is the past:
The long perspective eloquently tells
Of great thoughts garnered and dark parables
That forward still their powerful shadows cast.
But in these shadows there are lights that last,
And starry spaces that no vapour quells,
And words, whose music is as silver bells,
And themes that echo like a trumpet-blast.

He surely gropes uncertainly, who striving
Knows not how others, many a bar o'erthrowing,
Have found in part, or nobly failed to find.
But, looking back, he feels himself arriving,—
And some bright star, with deathless ardour glowing,
May flash and leave a guiding ray behind.

—R. O.

LOCAL ANESTHESIA IN THYROIDECTOMIES.*

BY HERMAN F. DERGE, A. B., M. D.,

EAU CLAIRE.

In the domain of local anesthesia, operative procedures on the thyroid assume a very prominent role. That such should be the case is readily apparent when one considers the relative superficial distribution and accessibility of the nerve fibres supplying this area and the frequency with which pathological conditions in this region are encountered that contra-indicate the use of a general anesthesia. At the present time the question of whether to use local anesthesia in any operation in preference to general narcosis is met with more and more frequently by the surgeon. This is especially true in thyroidectomies. Often it is the paramount and crucial decision in the case and depending upon how it is made, hinges the outcome. No matter how skilfully the operation may have been performed, if a mistake in choice of anesthesia has been made and a general narcosis employed where local anesthesia was indicated, the disastrous result may be directly attributable to the choice.

When considering what diseases of the thyroid are or are not amenable to the use of local anesthesia, one may speak of cases where its use is optional, obligatory or prohibitive. In the optional group can be included practically all colloid goiters and non toxic adenomas of the thyroid. Here the choice of anesthesia is more or less immaterial and does not affect the ultimate result. Its selection may depend upon the mere preferance of the surgeon and its rejection upon no better excuse than the objection of the patient. In the obligatory group I would place all cases where the damage to the heart and kidneys is the predominant feature and the psychical manifestations are negligable. This would include most of the toxic non hyperplastic goiters and a few toxic hyperplastic or exophthalmic goiters. Finally in the prohibitive group can be allocated many of those cases of hyperthyroidism or exophthalmic goiter where the fear, apprehension and mental excitability are such that any major operative proceedure, excepting ligation of the poles, carried out while the patient is conscious, would be certain to bring on a crisis. Should such a patient be taken into the operating room the pulse rate will invariably rise some twenty to forty beats compared to that while in bed, and his mental excitement become so alarming that to commence the operation would obviously court disaster. The average surgeon will do better to employ in these highly nervous cases general anesthesia in the form of nitrous oxide-oxygen anesthesia or Gwathney's ether oil rectal anesthesia, together with infiltration of the operative field with 1/2%. novocaine solution in accordance with method practiced by Crile of Cleveland. The more adept one becomes in the use of local anesthesia and the more certain one is of being able to regulate and control every phase of the patients environment during the interval between the time of leaving and returning to the room, the wider becomes the field of application of local anesthesia in these cases of exophthalmic goiters. Be it understood however, that there are cases where even the most experienced surgeons in local anesthesia must forego its use.

One of the prime requisites for this method of anesthesia is an intimate knowledge of the neural anatomy of the neck. The skin in this region is supplied by the superficialis colli nerve, which arising from the second and third cervicals, curves around the posterior margin of the sternocleidomastoid muscle at about the level of the thyroid cartilage as a group of two or three branches to enervate the skin and subcutaneous tissue of the anterior region of the neck from the chin to the sternum. About one centimeter above the point where the superficialis colli curves forward around the sterno-cleidomastoid muscle, the auricularis magnus emerges from behind this muscle and passes upward and backward to supply the skin in the region of the angle of the jaw and behind the ear. Failure to block this nerve is certain to cause the patient severe pain in its area of distribution when the upper pole of the thyroid is being delivered or clamped.

Supplying the deeper planes of the anterior portion of the neck is the loop formed by the descendens hypoglossi and the conjoined branches of the second and third cervical nerves, together with numerous small deep branches of the cervical plexus. The former in its descent from the upper part of the neck lies on the carotid sheath, giving off branches to supply the ribbon muscles of the

*Read before the Surgical Section State Medical Society of Wisconsin, La Crosse, Sept. 10, 1920.

neck, both bellies of the omohyoid and the anterior surface of the thyroid gland. The deep branches of the cervical plexus are all small branches and supply the posterior surface of the thyroid and contiguous connective tissue and muscles.

Various methods of infiltration can be used, but the one that will probably prove more satisfactory to the average surgeon is that described by Braun of Zwickau. In this method the entire field of operation is encircled with the anesthetic fluid and though every step is planned so as to block all the nerves concerned, the procedure is both simple and effective. Three circular intradermal wheels are established in the skin on each side of the neck along a line extending from a point a few centimeters in front of and below the tip of the mastoid to a point two centimeters above the junction of the outer and middle thirds of the clavicle. The upper and lower wheals are placed at the extremities of this line and the other about midway between. Two other wheals are raised in the mid line of the neck, the upper just above the hyoid bone, the lower in the supra sternal notch. These wheals are made with the finest hypodermic needle obtainable so as to reduce the pain incident to their introduction to a minimum. Being the first step in the operation it is very important not to hurt the patient. Attention to this little detail in the technique will serve to gain the patients confidence and really convince him that the procedure is practically painless. Failure to heed this caution may make a patient who would otherwise be calm and reasonable throughout the entire operation, extremely apprehensive and complaining. These wheals are formed by introducing three to four drops of a 1% novocaine adrenalin solution. As the solution is introduced under tension the anesthesia obtained is almost immediate and a needle seven to ten centimeters long can be inserted through these points and the subcutaneous tissue and fascia infiltrated with ½% novocaine adrenalin solution without any pain or discomfort. The infiltration is accomplished by depositing the fluid in the subcutaneous tissue, fascia, and muscles between the primary anesthetic points in a fan shaped manner, that is, the needle is first inserted vertically through the skin and as it progresses into the deeper tissues the fluid is uniformly introduced. When the proper depth has been attained the needle is withdrawn to but not out of the opening in the skin, and then again advanced in a plane a trifle nearer to the surface of the skin. This procedure is repeated until the needle is directed almost parallel with the skin. On the average four to five advancements of the needle are necessary. In advancing the needle the line of advance after the first vertical insertion is always in a line away from the point of introduction but toward the nearest established circular wheal. When properly executed the end result of this method of infiltration is a wall of infiltrated tissue posterior to the thyroid reaching from the skin to almost the oesophagus and a rectangular wall varying from 1.5 to 3 centimeters in depth encompassing the entire field of operation. Inorder to make certain that the incision will cause no pain, the line of the curved incision may also be infiltrated intradermally. If the patient complains of pain at any time during the course of the operation, this usually occurs when the thyroid is being delivered, particularly its upper pole. When this happens additional fluid must be injected posterior to the thyroid and between the posterior capsule and the thyroid gland. As the fluid cannot be maintained under pressure in the tissues, anesthesia is not to be expected for from three to five minutes and the surgeon must either patiently wait or busy himself elsewhere. The only possible stumbling block in the technique of infiltration can occur when attempting to inject the tissues posterior to the thyroid. Fear of injuring the carotid vessels, vagus nerve or penetrating the oesophagus tend to make the surgeon over cautious. This timidity is needless for in the first place these structures are touched only occasionally and in the second place nothing serious would happen should they be infiltrated. While it is quite possible that unpleasant symptoms might arise should both pneumogastric nerves be blocked, this accident is so unlikely to occur that it can be disregarded.

Depending upon the size and contour of the goiter varying amounts of solution are used. Ordinarly from 90 to 150 c. c. of ½% novocaine adrenalin solution suffice to give a satisfactory anesthesia.

Even though the toxicity of novocaine is one-seventh that of cocaine and relatively large amounts of novocaine solution can be used, some surgeons prefer to use a smaller amount and do this by infiltrating immediately about the nerve

trunks. In this method the superficialis colli and auricularis magnus nerves are reached by introducing the needle underneath the posterior edge of the sternocleidomastoid muscle just below where the external jugular vein crosses this edge, while the descendens hypoglossus and its anastomosing branches are blocked by entering the needle in the superior carotid triangle, above the omohyoid muscle and making the infiltration just beneath the deep fascia. The deep branches of the cervical plexus supplying the posterior portion of the thyroid are anesthetized in a manner already described. In this method the skin line is infiltrated first. If any nerves have been missed these are blocked as the operation proceeds. With this method I have had less experience but the fact that it is used by such well known local anesthetists as Hertzler, Allen and Harris speaks well for the method. I am inclined to believe however, that for the average surgeon it is too uncertain. As experience is gained it becomes the method of choice.

The actual technique of removing the diseased thyroid differs very little from that employed when a general anesthetic is used, and yet if this phase of the subject were dismissed without calling attention to several cardinal points in the technique, the operation under local anesthesia would be only indifferently successful. Sharp dissection with the edge of the knife should supplant blunt dissection; pulling and dragging of the tissues should be studiously avoided and all bleeding vessels ligated as soon as possible. Attention to the latter point may sometimes prevent a very embarassing situation. In this connection it is to be mentioned that the operation should proceed as noiselessly as possible, few words spoken and never any preemptory commands given. Every effort should be made to allay the patients fear and apprehension and during the days preceding the operation, no opportunity should be missed to point out to the patient the advantage of local anesthesia over a general anesthetic, care being exercised not to touch on the serious side of the operation. Many patients, when the subject of local anesthesia is first mentioned, offer strenuous objections to its use. To ignore their objections and proceed with the operation would be a mistake. Well chosen conversation, opportunely presented, will often convert an objecting patient into one anxious to have the operation performed at the earliest possible moment. This change of attitude is expedited if the patient should be visited by a friend who has been successfully operated under local anesthesia, and is not of the kind that takes a morbid delight in picturing himself a martyr, who has undergone a terrible ordeal. Should such a type come in contact with your patient, the chances of performing that operation under local anesthesia have been reduced to the vanishing point.

The choice of the kind of drug to be used is most important. Of the various compounds that are on the market novocaine or procaine, and aposthesine are the most frequently used. Both these preparations have all the requisites of the ideal local anesthetic, that is, they are soluble in water, do not deteriorate on boiling, have a low toxicity, produce a lasting anesthesia, do not damage the tissues, are effective in weak dilutions and are compatible with adrenalin. When used in dilutions from ½ to 1% to which ten to fifteen drops of 1-1000 adrenalin have been added, a perfect anesthesia can be obtained. Fortunately the toxicity of all are very low and relatively large amounts of the ½% solution can be injected. I have used as high as 160 c.c. in a single case without ever having observed any deleterious effects. So freely can novocaine be used that some surgeons do not consider it important or necessary to keep a record of how much of the solution is used in each case. Braun states that he has used as much as 250 cc. of ½% novocaine solution without any danger whatsoever.

At the present time local anesthesia in thyroidectomies is not resorted to as often as it should be. Some surgeons hesitate because they believe the method too complicated and uncertain for their ability; others because of operations they have chanced to witness have been far from painless. From my personal experience with this method I would say that more patients complain of discomfort caused by the position on the operating table than of the pain. Very few operations can be carried through actually painlessly, such perfection is not to be expected. Occasional sharp twinges of pain, even if severe, are readily borne by the patient. It is the oft repeated or continuous pain that saps the patients' fortitude and makes him plead for relief from suffering by taking a general anesthetic. The instances where local anesthesia has to be discontinued because of

inability to eliminate pain are exceptional. Fear, extreme apprehension, unreasonableness and other psychic phenomena are much more potent factors in compelling one to resort to general anesthesia.

The advantages ascribed to local anesthesia in thyroid surgery are as follows:

1. No additional toxic effects on the heart and kidneys.
2. Less post operative nausea or vomiting.
3. More assurance of not injuring recurrent laryngeal nerves.
4. Due to the hemostatic effect of the adrenalin there is less troublesome bleeding.
5. Pneumonic complications are reduced.
6. If desirable, surgeons can work with more deliberation.
7. Reduction of possibility of shock by blocking nerves and preventing ingress of painful afferent impulses.
8. Patient can co-operate with surgeon and in certain stages of operation can phonate or hold his breath, thereby facilitating operative proceedures.
9. Dissection is aided by infiltrating the tissues.
10. Dehydration can be immediately combated by allowing patient to drink fluids freely after operation.
11. The incumbent gentleness of handling the tissues diminishes the shock and reduces the amount of toxic products forced into the general circulation.
12. The depression following regional anesthesia is not so pronounced as is the case in general anesthesia.

Regarding the disadvantages of this method or better the advantages of general narcosis the following are to be mentioned.

1. The unconscious and relaxed patient is protected from psychic excitation.
2. The operation can proceed with more speed.
3. The surgeon's attention is not distracted by any protestations or complaints of the patient.
4. There is less need of patience or gentleness on the part of the surgeon.

It is to be observed that these advantages of general anesthesia, when weighed with those of local anesthesia, are of a rather doubtful value, and yet they constitute the sheet anchor of the surgeon who chooses general in preferance to regional anesthesia.

In conclusion it may be said that thyroidectomy under local anesthesia is a very satisfactory operation to any surgeon familiar with thyroid surgery who will familiarize himself with the neural anatomy of the neck, take the time and have the patience to infiltrate the region properly, handle the tissues gently, refrain from dragging and pulling, supplant blunt with sharp dissection wherever feasible, and see that the patient while on the operating table is in as comfortable a position as possible. In the final analysis the success of the proceedure must be left to the verdict of the patient. If the patient admits that there has been little pain and on being interrogated by a goitre afflicted friend or acquaintance recommends the local anesthesia method, then there can be no doubt of its successful application.

MEGALOCOLON.*

THOMAS WALTER NUZUM, M. D.,
JANESVILLE.

Megalocolon, or Hirschsprungs Disease is an enormous dilatation of the greater part or all of the colon, with marked thickening of the walls and with no discoverable cause. The condition was first described by Hirschsprung in 1886, although Billard and Barry as much as sixty years before had reported instances of 'enormously distended colons with no apparent obstruction." Since that time extreme enlargement of the colon has been divided into two distinct types. The first, congenital, idiopathic dilatation of the colon or true Hirschsprungs Disease is infrequently met with. The second is an enormous dilatation of a part or all of the colon due to mechanical obstruction of more or less long standing.

The etiology of the two types of Megalocolon is very different. The cause of Hirschsprungs Disease is not known. Da Costa considers it an anatomical anomaly. The cause of the acquired type is an obstruction of the lumen of the colon. The gradual narrowing of the lumen by a slow growing neoplasm, or by adhesions, with the increasing difficulty in the passage of fecal material by the point of obstruction, results in a dilatation of the colon proximal to the point of obstruction.

The pathology of the two conditions likewise differs sharply. In the congenital type of dilata-

*Read before the Tri-State District Medical Society. Waterloo, Iowa, Oct. 4, 1920.

tion, the walls of the distended gut is increased in thickness as much as 1/8th of an inch and have a leathery feel. The characteristic markings are apt to be absent, even the white lines gone. The mesentery may be thick and oedematous. In instances of acquired dilatation of the colon obstruction of the lumen of the bowel will be found. The walls of the distended portion of the large gut are thinned, sometimes to a remarkable degree. This is more especially true when the obstruction has not been of long standing. When the narrowing has been a matter of months, the walls of the distended portion of the gut become thickened as a result of the excessive peristalses that take place.

The symptomatology of the two types of megalocolon is much the same. In Hirschsprungs Disease there is a history of stubborn constipation. There are frequently times when the patient is unable to have a bowel movement for several days. Guy (2) has reported an extreme instance that went three months without a bowel movement. At these times there is a huge distention of the abdomen and cramps and severe pain are often complained of as a result of the excessive peristalsis. The other symptoms usually associated with obstruction of the bowels are then apt to become manifest. When the obstruction is not complete, mal-nutrition and ill-health as a result of toxemia may occur. Della Valle (*3) has recorded the death of a five-year-old boy of toxemia from a megalocolon with intact mucosa. He found in the literature two similar instances.

While costiveness and frequent attacks of extreme difficulty in getting the bowels to move is the rule, there are instances however in which the condition has been present for years without symptomatology. Edward Howard of London (*4) found a true congenital idiopathic dilatation of the colon at autopsy in a man 65 yrs. old. Sommers (*5) reports an instance with sudden onset for the first time in a child of 13 yrs.

The diagnosis of Hirschsprungs Disease should be easily made if this condition is kept in mind. The age of the patient since it is most apt to manifest itself in childhood. There is usually a history of stubborn costiveness or frequent attacks of almost complete obstruction of the bowel. During these times the abdomen is hugely distended and is so tense that nothing definite can be determined by palpation. After the patient has been relieved and the abdomen becomes soft, physical examination is again negative. Nor does the proctoscope or a study of the stools lead to positive information. The giving of a bismuth enema, however, followed by a screen or plate examination reveals the trouble at once. The huge enlargement of the colon throughout its entire length or, more usually, throughout only a part of its length, is absolutely characteristic of Hirschsprungs Disease.

In instances of acquired megalocolon, the patient is generally an adult, since annular carcinomata of the colon, adhesions and other conditions which usually cause obstruction are prone to occur later in life than childhood. The constipation becomes more and more obdurate. At a time when the abdomen is not greatly distended, physical examination may reveal the presence of an unusual mass at some point along the course of the large bowel. Or a proctoscopic examination might reveal a low lying structure, ulcer or carcinoma. An X-ray study would undoubtedly reveal the point of narrowing and give some information as to its cause.

I will cite two cases of acquired megalocolon in point: Miss S., age 24, a clerk, was taken ill with what was diagnosed as appendicitis. She was treated by the Ochsner method for some ten days, when an operation was advised and accepted. Upon opening the abdomen a large tumor presented which quite filled the abdominal cavity. This proved to be the caecum and ascending colon. There was a band of adhesions constricting the transverse colon beyond which the intestine was empty. The band of adhesions was divided and the liquid feces began to pass along. The patient recovered after a stormy convalescence.

Case 2: Mrs. M., age 65, had suffered from constipation for some time and had used laxatives quite regularly until she embraced the Christian Science Faith. She then threw aside the physic.

I was called to see her at a healer's home and found an elderly lady with greatly distended abdomen, vomiting fecal matter. I elicited the following history. She had had no bowel movement for more than two weeks; but had continued eating heartily in the meantime and for the past week had been under treatment by the healer. She was removed to the Hospital, refused operation and died at the end of three weeks, still strong in the faith.

A post-mortem examination revealed an annular

carcinoma of the sigmoid and above this the colon dilated into a tumor larger than an adult head and full of liquid feces. One would scarcely believe the colon capable of being so distended as was the case in these two patients, but they lacked the thick wall and leathery feel that the true megalocolon exhibited.

The history of a third patient is quite different. K. S., age 6 yrs., of Holland Dutch descent, was brought to the hospital Dec. 20, 1919. The family history was unimportant. Her personal history was that of having suffered since birth from costiveness for the relief of which enemata or physic had been used almost daily. When six months old she had an obstruction of the bowel which was relieved by enemata. She often suffered from severe colic and obtained relief by lying down upon her abdomen when flatus was expelled and relief obtained.

One year later she was taken to Chicago for an X-ray examination and treatment. She was six weeks in one hospital and five in another. No definite diagnosis was made, but she was given Russian Mineral Oil in liberal doses and got along fairly well until the present attack.

When first seen by us, her bowels had not moved for some days and morphine had been given repeatedly to control the severe cramps.

Physical examination showed her to be a frail, undersized child. The abdomen was enormously large and the lower ribs flared markedly. The pulse was fast. She had no temperature. Hot applications to the abdomen, various enemata, varying postures, etc., gave no relief from pain and no bowel movement and after twelve hours her condition apparently not permitting of further delay, she was submitted to operation.

Under ether anesthesia a median abdominal incision was made. A large tumor protruded into the wound which was at first taken for the stomach, but upon further study it was found to be the colon, although it had quite lost the characteristic markings of that organ. The wall of the gut was very thick, the white lines had disappeared and it had the feel more of leather than living intestine. It was some six inches in diameter and from the hepatic flexure downward, increased in diameter until within two and one-half inches of the anus where it suddenly became the size of a normal gut. The sigmoid, which was the largest portion, was so crowded into the pelvis that it kinked, thus causing the obstruction. The mesentery was thick and oedematous.

The condition of the child did not warrant a formidable operation and the mechanical difficulties connected with the attachment of the small intestine to the short bit of a rectum would have been great. We, therefore, determined to carry the sigmoid across to the caecal region, attaching it to the abdominal wall, thus carrying it out of the pelvis and relieving the kink.

At McBurney's point we put a small rubber tube through the abdominal wall and into the distended bowel, through which we could irrigate the colon. Upon the return of the patient to her room an enema brought immediate results, the distention subsided.

The colon was irrigated daily through the rubber tube and injections of Bulgarian Bacillus given. The child gained rapidly in health and strength. After some weeks a small fistulous opening, through which some gas and feces would escape at times, was still present. This finally closed. When last heard from the child was reported in good health.

The medical treatment of Hirschsprungs Disease, consisting of laxatives, daily enemas and massage offers temporary relief. A cure, however, can only be effected by surgical procedures. Resection of the colon and anastamosis of the proximal and distal ends is undoubtedly the operation of choice when the condition of the patient will warrant such a formidable procedure. The mortality is very nearly 50 per cent when this is done. (*6).

A safer line of procedure consists in first making a colostomy later resecting the dilated portion of the gut. Sommers (*7) in a child of 13 yrs. followed this plan. Two weeks after the colostomy, a median incision disclosed an enormous sigmoid flexure. A small incision was then made in the left groin through which the sigmoid loop was pushed and sutured to the abdominal wall. Two days later the sigmoid loop was resected.

Still another method of procedure is similar to the one adopted by us. Mr. Markings (*8) of England, corrected the position of a kinked loop in a Hirschsprungs Disease and fixed it with good effect. Perthus (9) has described in detail a case in a lad of fifteen years "where a valve formation in the sigmoid was the principal factor in the

trouble." He restored the patient to health after five laparotomies in the course of three years. He found two similar instances of valve formation in two other cases at autopsy.

In our patient the kinking of the hugely dilated sigmoid flexure was the final factor in bringing on her attacks of obstruction of the bowel. Whether the relief she has obtained by drawing the bowel out of the pelvis and fixing it on the abdominal wall will be permanent, remains to be seen. If relief is not permanent one of the more radical proceedures can be effected.

Late reports are that the child is enjoying good health.

CONCLUSIONS.

1. True Hirschsprung's Disease is a congenital anomaly and dates from birth. It differs much from the acquired form in the physical appearance of the colon and mesentery.

2. Its rarity makes the proper diagnosis less likely.

3. It may be treated with some success by enemas and massage.

4. A cure requires surgical measures, which may consist of:

(a.) Resection of the colon and anastomosis of the proximal end to the rectum.

(b.) Making a colostomy and later resecting the diseased portion.

(c.) Correcting the position of the colon, thus relieving the kink and attaching the same to the abdominal wall after introducing a tube through which to treat the colon.

5. The latter is a safe proceedure where the condition of the patient is bad, and paves the way for resection later should it become necessary or advisable.

AND ELECTROLYSIS.

Three cases of sacculated aneurysm of the aorta successfully treated by wiring and electrolysis are reported by Hobart Amory Hare, Philadelphia (Journal A. M. A., Feb. 26, 1921). He emphasizes that one of the most important effects of the operation is the relief of pain, which usually occurs almost at once in every case.

THE KNOCKER.

When a patient begins to knock his former medical attendant, shut up like a clam. He will knock you just as hard before long. We can all make mistakes, but give the absentee the benefit of the doubt until you get his side of the case.

SACRO ILIAC JOINT ARTHRODESIS BY BONE SPLITTING METHOD.

F. J. GAENSLEN,
MILWAUKEE.

Exposure of the sacro iliac joint may be necessary for tuberculosis of the joint or for persistent strain of the joint resisting all conservative measures.

In both the conditions named the logical treatment is arthrodesis of the joint, that is, removal of the contiguous cartilaginous surfaces with the idea of securing bony ankylosis.

Tuberculosis of the sacro iliac joint is a very rare and a very serious condition, one in which an arthrodesis is justified, so soon as the diagnosis of the condition is certain. This course would correspond with the at present accepted treatment of tuberculosis of the knee joint. The important point is to eliminate motion. This is obtained most easily and most certainly by removal of the joint cartilage when firm bony union may be expected. There is no form of brace or support which will take the place of surgical fixation of this joint. The mechanics of the joint is such that the skeleton itself bears very little strain while the ligament out structures are practically entirely responsible for the integrity of the joint.

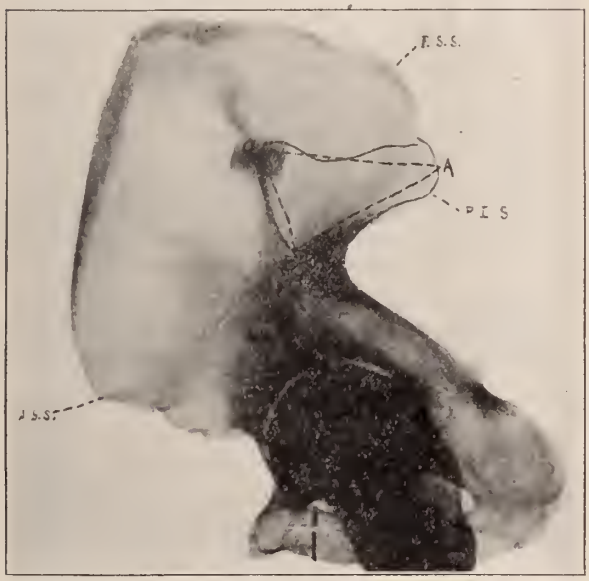
As far as the literature was available no accurate operative plan has been published. For this reason the following plan is offered. It has been used in four cases, brief reports of which will be appended. In the figure the sacro iliac articulation has been accurately outlined by a wire following the joint line and held in place with adhesive plaster. There is practically no distortion, because the X-ray tube was placed at a distance of six feet from the plate, the dry bone specimen resting directly on this. This outline of the joint projected on the outer wall of the ilium is of value in assisting one to visualize the location of the joint at operation.

TECHNIQUE OF OPERATION.

A curved incision is made parallel to and about one-half inch above the crest of the ilium through the skin and subcutaneous tissue, extending from just behind the middle of the crest to the posterior inferior spine of the ilium. The flap is then dissected free to the outer margin of the crest. With a broad, flat chisel the posterior portion of the ilium is split to a depth of about two and a half

inches into an inner and an outer leaf. The outer leaf is made a little thicker than the inner. The chisel is directed forward and slightly outward in the direction of the anterior superior spine of the ilium of the same side. The outer flap is broken at its base and deflected outward as far as possible, stripping off the periosteum from the adjacent portion of the ilium just below and anterior in order to increase the working space. While it is well to have this outer leaf split off in one piece, this is not essential. If the bone flap breaks off at a shorter distance, the bone is simply split farther to the required depth, the split portions being again deflected as before.

The inner leaf of the ilium over the sacro iliac joint is next attacked. With a broad chisel held in a plane transverse to the long axis of the body



Print of X-ray of dry pelvis seen from external side. The margin of the sacroiliac articulation has been accurately outlined by means of a wire held in place with adhesive plaster and projected on external surface of ilium.

this inner leaf of the split portion of the ilium is now cut on a level with a point just above the posterior inferior spine to the extent of two inches, corresponding to the line a-b in the diagram. A vertical cut about one and a half inches in length is now made from the anterior end of this incision extending toward the crest of the ilium at a point joining the middle and posterior third of the crest. The points a and b are now joined with a third chisel cut, a triangular piece of bone, therefore, being removed.

The destruction of the joint is begun at the lowermost border of the sacro iliac joint where it is plainly in view, and is carried forward from this point, working forward and slightly outward in general in the direction of the anterior superior spine of the same side. In the tuberculous joint, this procedure is far easier than it is in one where the bone tissue is normal. In the superficial portions, a large bone or curette is used while the deeper portions of the joint are attacked with smaller curettes, only enough bone being removed on either side of the joint line to allow thorough removal of the cartilage. A deep trough is thus formed narrowing toward the bottom of the wound. Caution must be used in order not to perforate into the pelvic cavity. For this reason the curette is a safer instrument to use in the deep portions. In the upper one-half of the joint the anterior sacro iliac ligaments are fairly dense and readily recognized as the last layers of bone are removed, but in the lower portion they are much thinner and it is here that perforation is more likely unless precaution is taken.

After eradication of the joint in the manner described the deep trough is filled up with healthy cancellous bone chips removed during the course of the operation. The deflected outer leaf of the ilium is then brought into position and sutured along the crest to the inner leaf of the ilium which has been allowed to remain standing. A few interrupted chromic sutures are all that is necessary in the way of closure of the deep parts. In several cases operated upon, the inner leaf was broken off toward the medial side, but in perfecting the technique of the operation on the cadaver it was found that the inner leaf could be left standing without adding to the difficulties of the operation.

It is very essential to have the plane of the joint and its relations to the normal bony land marks well in mind when doing this operation. When the patient lies prone on the table with sterile sheets covering all but the operative area, it is difficult to visualize the joint relations so that one can go ahead with speed and assurance unless the land marks are well kept in mind.

The advantages of the operative route above described are:

1st. Non-interference with the posterior ligamentous sacro iliac supports.

2nd. Lessened hemorrhage.

3rd. The ease of closure.

4th. The preserving of the normal body contour.

Four cases were operated upon by this method, in one case for tuberculosis of the sacro iliac joint, in two for persistent symptoms of sacro iliac strain or relaxation, and the fourth in a traumatic dislocation of the joint. Brief histories of these cases are appended.

Case 1. M. H. Age 25. Admitted to Mt. Sinai Hospital with diagnosis of chronic back strain presumably both lumbo-sacro and sacro iliac.

P. I. Pain in back for past eighteen months.

P. E. Moderate scoliosis. Spasm in left lumbar region. Spinal motion restricted. Condition disabling. Operation November 10, 1916. Albee fixation of lower lumbar and upper sacral spinous processes and arthrodesis of sacro iliac joint. Posterior wing of ilium split, the split halves being deflected inward and outward. Destruction of joint with gouge and curette. This was not as thorough as desired because of patient's general condition. However a considerable portion of the joint surface was removed. Recovery practically uneventful.

Case 2. I. R. Age 24. First seen in August, 1917.

P. I. Pain in right hip at first coming on in form of severe attacks with slight pain persisting in intervals. Worse on exercise. Relieved by rest. Had lost 37 pounds. X-rays negative. On examination there was slight scoliosis referred pain to right sacro iliac joint both on compressing iliac crests and on separating them, the pain extending down the right thigh. Slight atrophy of right calf, both knee jerks exaggerated. The Achilles reflex absent on the right, present on the left.

Diagnosis, at the time, sacro iliac relaxation. Treated with belts and supports of various kinds, also traction in bed with foot end of bed elevated, without result. Some months later further study and X-rays revealed a tuberculous lesion of the right sacro iliac joint.

On December 18, 1917, operation was performed practically as in first case, the destruction of the joint, however, being complete and much more easily carried out than in previous case, due to disease and partial destruction of joint. Operative notes taken from history are as follows:

Curved incision 12 cm. long about 2 cm. in side and parallel with upper portion of crest of ilium. Reflection of flap exposing corresponding portion of iliac crests. Crest split longitudinally deflecting both sacral and gluteal sides down to sacro iliac joint. On biting away into lower angle of joint about 4 cc. of a thick greenish pus evacuated. Abscess wall consisted of thick velvety granulation tissue, typically tuberculous. With periosteal elevator, joint was pried open and joint surface removed practically throughout entire extent so that with curved forceps one could pass directly into the true pelvis between a few bridges of bone left intact. During this proceeding an additional small collection of pus, situated sub peritoneally uncovered. Cavity filled up with large number of healthy bone chips obtained from ilium during approach to joint. Split portions of ilium united by about 6 Kangaroo tendon sutures. Deep fascia closed with cat gut and skin with silk worm gut and horse hair without drainage.

Plaster cast four months, then brace. Complete relief of symptoms at present date.

Case 3. L. B. Age 25. Admitted to Columbia Hospital for persistent backache, assumed to be due to sacro iliac relaxation. Resistance to all forms of conservative treatment, including bed traction, for six weeks, and spinal brace.

Operation October 17, 1919, sacro iliac arthrodesis. At time of discharge patient still had pain and was practically unrelieved. No recent notes on condition obtained.

Case 4. P. M. Age 38. According to history patient was hit by a car in mine. Physical examination and X-ray findings showed a fracture through the ilium close to the sacro iliac joint. Union of fracture apparently firm, but patient had peculiar rolling gait and pain referred to the joint. On straight leg raising there was an audible and palpable grating, felt most distinctly over the sacro iliac joint. Patient had had back supports and appliances of various kinds without benefit.

On January, 1918, sacro iliac arthrodesis performed according to plan above. Patient was discharged from the hospital April 29, 1921, without pain and without creaking of joint on motion. He has not, however, been allowed to return to work as yet.

In closing I wish to express my appreciation of the courtesy of Dr. Sullivan of the Anatomical Department of the University of Wisconsin for providing opportunity for carrying on the anatomical studies involved.

BOOK REVIEWS

Surgery of the Upper Abdomen. By John B. Deaver, M. D., Sc. D., LL. D., F. A. C. S. Barton Professor of Surgery in the University of Pennsylvania, Surgeon-in-Chief to the Lankenau Hospital, and Surgeon to the University Hospital and Astley Paston Cooper Ashhurst, A. B., M. D., F. A. C. S. Associate in Surgery in the University of Pennsylvania, Surgeon to the Episcopal Hospital, Philadelphia, Colonel Medical Reserve Corps, U. S. Army. Second Edition with 9 colored plates and 198 other illustrations. Philadelphia. P. Blakiston's Son & Co. Price, $14.00 net.

This second edition of Deaver and Ashhurst on the surgery of the upper abdomen is a most commendable text on the surgery of the stomach and duodenum, the gall bladder. the liver, the pancreas and the spleen.

The various surgical conditions arising in these organs are described in detail in a most excellent manner and the surgical management of them detailed in a very satisfactory way.

The statistical data collected not only from their own experiences but from other leaders of surgery is presented in a very plain and fair way, and where wholesome differences of opinion exist both sides of the question are fairly summarized.

It is by far the best individual volume that has come to our attention on this group of surgical lesions. It should serve as a handy reference for both internists and surgeons and should prove of great service to medical students who are investigating these important subjects for the first time.

The illustrations are very well chosen, and the index to this volume appears very thorough and complete.

The book is an additional tribute to the surgical skill and literary attainments of Dr. Deaver and Dr. Ashhurst.

Dermatology. Walter James Highman, Chairman Section on Dermatology and Syphilology, American Medical Association, Associate Professor of Dermatology New York Post Graduate Medical School and Hospital, etc. First edition, 482 pages, 95 illustrations. The MacMillan Co., New York, 1921.

Highman's Dermatology presents all that the subtitle indicates, the essentials of cutaneous medicine, in a precise, accurate and thorough manner and with a distinctive literary style that renders the perusal easy and enjoyable. The text covers the main points thoroughly without lengthy digressions on questions of academic and scientific interest, thus meeting the needs of the undergraduate student and the practitioner for whom it is intended. Emphasis is laid on the importance of approaching skin diseases from the viewpoint of internal medicine, symptomatology and diagnosis are adequately and admirably discussed, and though the subject of histo-pathology is excluded the underlying pathological processes are properly emphasized. The paragraphs on treatment are chiefly generalizations with the frequent addition of methods and prescriptions which the author has found useful.

The text, numbering 454 pages, is divided into the following six sections: general considerations, pure dermatoses, parasitic diseases and infections, neoplasms and nevi, diseases of the organs of the skin and of the mucous membranes, and syphilis, the last section covering 53 pages. The acute infectious exanthemata are discussed among the cutaneous reactions due to vascular disturbances, and eczema is ruled out as a pathologic entity and discussed under the subject of vesicular dermatitis. Many diseases and conditions of lesser importance to the student, because of their infrequent occurrence, are presented in smaller type, and numerous tables are included for clarity and brevity. There are 95 full page photographic illustrations of the commoner or more important diseases from the collections of Drs. J. A. Fordyce and G. M. MacKee. These photographs are excellently reproduced and each is accompanied by a description calling attention to the salient features. The book is published by the Macmillan Company of New York, and is well bound and printed on dull paper, in large, well spaced type.

Coming from the pen of a dermatologist of Dr. Highman's recognized standing and attainments this textbook may be taken as authoritative and the reviewer feels he can recommend it with unbiased enthusiasm.

H. R. F.

Regional Anesthesia. (Victor Pauchet's Technique.) By B. Sherwood-Dunn, M. D., Officer D'Academie; Surgeon (Colonel) Service de Sante Militaire de Paris; Physician to the Cochin Hospital. With 224 Figures in the Text. Philadelphia. F. A. Davis Company, Publishers. Price, $4.00. 1921.

One of our foremost American surgeons said recently that his best advice to the young man engaged in surgery would be to urge him to study and perfect himself in local and regional anesthesia.

Dr. B. Sherwood-Dunn has furnished us with a very excellent text, rich in details and in illustrations on regional anesthesia that will be of great help to all of us in both minor and major surgical procedures. The book is divided into seven chapters, and covers technique in all the operations where regional anesthesia is indicated. The illustrations are very clear, and no expense has been spared in putting the book together in a neat and attractive manner.

J. B. M.

THE OLDEST PROFESSION.

When Eve upon her firstborn softly laid
Her cooling hand, to charm away his tears,
A voice beside her softly sounded in her ears,
A voice so sweetly kind that, unafraid,
She smiled reply, nor fearful motion made.
This Spirit, coming from the heavenly spheres,
To heal the wounds of man, allay his fears,
And lift him upward, only love betray'd.

And thus, beside a little babe, began
Thy work, O Medicine, which, as Time unroll'd
His echoing ages, ever grander grew.
Till now, wherever falls the foot of man,
To thee he looks to have his course controll'd,
In paths well-order'd, or in regions new.

R. C.

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EDITORIALS

HOME-COMING MEETING.

THE "Home-Coming Meeting" in September promises to be everything anticipated of it. Former Badgers are writing, almost without exception, of their intention to be back in good old Wisconsin at the time of the meeting. Wisconsin men will, of course, make their plans now to be in Milwaukee, September 7, 8 and 9 to welcome them. A few of the replies follow:

"I shall certainly attend unless something unforeseen occurs." Frank Billings, Chicago.

"We will mark the second week in September in red on our calendar." H. B. Tanner, Eastland, Texas.

"You may be sure that I will make every effort to attend." D. M. Berkman, Mayo Clinic, Rochester, Minn.

"I will surely make an effort to be present and feel confident that I will be able to follow out this plan." A. J. Ochsner, Chicago.

"Your 'handgrasp across the miles' of March 23, 1921, was some *stretch* but it was appreciated nevertheless. As you see by the above heading, I have been transferred from the parched and arid desert of the United States to the land of waving palms and tropic moons, in close proximity to a Republic where the coal dealer dies of starvation and the 18th Amendment cometh not. If I am in the States in September, I will surely try to attend the 75th birthday of the Society. Thanks for the invitation." W. C. Rucker, Panama Canal.

"I shall be very glad to be present at the home-coming meeting in September." R. E. Farr, Minneapolis, Minn.

"I shall indeed enjoy going back with a lot of old Wisconsin men and renewing old University and Medical anecdotes." Burt R. Shurley, Detroit, Mich.

"I shall make every effort to be present." Edward S Blaine, Chicago.

"I am holding the dates, September 7, 8 and 9 open and I am looking forward to this meeting and am anxious to help in any way I can." Joseph C. Bloodgood, Baltimore.

"I shall certainly plan to be there. I recall my days of membership in the Wisconsin State Society with special pleasure and shall be glad for an opportunity to renew old associations." John M. Dodson, Chicago.

"I was delighted to receive an invitation to the home-coming and will endeavor to arrange my plans so as to be with you." A. F. Jonas, Omaha, Nebraska.

SERVICE.

"THE family doctor has constant opportunity, special to his professional relations, by organized charity, by personal devotion, by advice, by warning, by reproof, as the condition may demand, to help man choose the better part."—Bruce.

SHORTAGE OF PHYSICIANS.

THE Boston Medical and Surgical Journal in an editorial calls attention to a serious shortage of physicians in the United States and an increase in the number of quacks, and predicts that the conditions for the next few years will be worse rather than better.

The reasons for these conditions appear to be due to a greatly increased cost in securing a medical education and the uncertainty of the rewards obtained for professional services. If the promising young man discovers that various lines of business offer more in the nature of rewards than medicine, it is quite natural that he will prepare himself for some calling more profitable.

Referring to the medical course and the length of time required the editorial states:

Looking beyond the confines of the college and medical school, we find that the practitioners of medicine are roughly divided into progressive and unprogressive; that this division does not depend upon their previous education; that the incomes of the several men are not so much dependent upon their professional skill as upon their business ability. Snap diagnoses, slovenly treatment, and failure to use modern methods in diagnosis and treatment are driving patients from office to office until they arrive at some quack's who has sufficient knowledge of psychology to fool the sufferer.

Again in relation to Army Medical Service:

As is well known, there was a time when the only attempt at maintenance of a high standard of medical proficiency was made by the Army and Navy. The standard on entrance was very good but it was learned that after a man passed his second examination, many of them progressed no further. To overcome this, about the time state examinations began, laws were enacted which ultimately required that every member of the medical corps, up to and including the lieutenant-colonels must demonstrate their professional ability before being promoted. The result is that in the medical corps of the Army and the Navy you will find a body of men read in their profession and alive to modern methods.

To prevent the disaster which is sure to come to the public if this condition continues, may we not appeal to the public for increase of pecuniary rewards.

HOW TO KILL ANY ORGANIZATION.

1. Don't come to the meetings.

2. If you do come, come late.

3. If the weather doesn't suit you don't think of coming.

4. If you do attend a meeting, find fault with the work of the officers and other members.

5. Never accept office, as it is easier to criticize than to do things.

6. Nevertheless, get sore if you are not appointed to a committee; but if you are, do not attend the committee meetings.

7. If asked by the chairman to give your opinion regarding some important matter, tell him you have nothing to say. After the meeting, tell everyone how things ought to be done.

8. Do nothing more than is absolutely necessary, but when other members roll up their sleeves and willingly, unselfishly use their ability to help matters along, howl that the organization is run by a clique.

9. Hold back all your dues as long as possible, or don't pay at all.

10. Don't bother about getting new members. "Let George do it."—Exchange.

ARE WE GUILTY?

"THE most common tumor in a female of child-bearing age is the pregnant uterus." Though almost a decade ago, I can still hear the Professor of Obstetrics pounding this truism into us at every opportunity. His experience as consultant in obstetrics and gynecology had taught him that the young practitioner in his zeal to make the correct diagnosis and possibly to discover some obscure condition, will all too readily overlook the most common cause of abdominal tumor. This is particularly true when the patient desires to conceal her condition, for, as Hirst says: "These patients are at times actresses of consummate ability."

In the field of tuberculosis we are dealing with strikingly similar conditions. Tuberculosis is today the most common chronic disease that we physicians have to deal with in this part of the country. Years ago, typhoid fever fought hard for this honor, but the heavy blows delivered by preventive medicine left this disease with little resistance with which to withstand the knockout punch of typhoid inoculations. In a community whose health officer is on the job, typhoid fever is today for all practical purposes unconscious. If typhoid fever is active to any extent, the health officer is probably unconscious.

In the general practice of medicine, hardly a patient can be examined, certainly not a day passes without the question of tuberculosis coming

up for consideration. Tuberculosis is so frequent that it behooves us to be ever on our guard lest its very familiarity tend to make us careless and forgetful. Do we in our eagerness and anxiety not to overlook some more or less obscure condition, slip upon this most common chronic disease?

The other point of similarity, that of concealing or withholding the truth, is today perhaps not quite so frequent as years ago. At the same time patients do still purposely or unconsciously withhold the truth, or at least minimize their symptoms. "Does the patient have a cough?" After some hesitation he may admit that he does cough, but "only very little" and usually adds that the cough is due to catarrh or that it is a stomach cough (?). The question "Has there been any tuberculosis in your immediate family?" will usually bring a quick, negative response, whereas more thorough questioning will frequently show the possibilities of direct contact during the patient's childhood. There is, of course, no direct intent to deceive the physician by these vague answers, but it is simply the old story that the patient does not want a diagnosis of tuberculosis made and is unconsciously trying to lead the physicians' mind into some other channel.

Are we forgetting that the pregnant uterus is the most common abdominal tumor in a woman of child-bearing age?

THE GET TOGETHER SPIRIT.

HOW well do you know your fellow-practitioner? Do you know him only by what his patients or your patients or other gossip have said about him? Gossip is notoriously unreliable. Has he done some little thing which has prejudiced you against him? There may have been extenuating circumstances which would explain or excuse the deal. He has his faults—no doubt about it. So have you, so have we all, but "a man's a man for a' that."

Have you watered the plant of professional jealousy until it has come to be a fullgrown thistle always presenting a prickly front? You can't expect to get close to the other fellow if you are hiding behind any such growth. Have you ever got in touch with him on other than professional grounds? You may find he rides the same hobby you do. He may have become wise through the same investments. He may be able to tell just as big a fish story as you can. He may have missed just as many deer as you have. He may have wrestled with old Colonel Bogey even as you have, with more or less success. There is only one way to find out these things—by getting together.

The get together spirit is growing, no doubt about it. Automobiles and better roads are doing their part. A county society met last week, just an ordinary monthly meeting and a stormy night, yet forty-five out of a membership of eighty came from six different towns. Local physicians' clubs seem to help rather than hinder the attendance at the county meetings. The more they get together, the more they want to get together. In one town in the southern part of the State, there are a dozen physicians who meet two or three times a week in a noon Y. M. C. A. gym class, playing handball and volley ball together. You can imagine they come away from such get together times with a new feeling for each other.

Then there are the summer meetings in July and August, just social picnic gatherings for the doctors and their wives—a chance to know each other in a little different way. Surely these are worth while. There is an old hymn, "We Shall Know Each Other Better When the Mists Have Rolled Away." Why wait until that late date?—E. B. B. (A County Secretary).

AS OTHERS SEE US.

(Editorials from the Lay Press.)

OUR HOSPITALS.

There are some walks of life where credit for service rendered well is seldom bestowed. To those who labor in behalf of many worthy causes, the only reward is a satisfied conscience that comes from the knowledge of duty well performed. The results of such work, due to its nature, are hidden from public view. Many tasks, quite insignificant in comparison, are heralded throughout the land as rare accomplishments—why? Because they reach the mediums of circulation.

In our hospital service we find striking examples of the nature described. Day in and day out the superintendent, the sisters and nurses minister quietly to the sick and suffering. Doctors and surgeons move quietly among the patients, giving the nurses direction as to care, medicine, etc. The failure of the attendant to carry out in detail those orders may result in the snapping of that slender thread of life and one more shall have

passed beyond. To the ill and distressed, comfort is a major factor, and the nurse must understand every minute item that contributes to such state.

In speaking of our local hospitals, we may form either one of two pictures: We may think of the structure alone or of the institution which includes management, sisters, nurses, etc. Naturally we place the greater weight on the latter view. Buildings are but inanimate things; in the nursing corps, trained physicians and apparatus, lies the real foundation of the hospitals. To perform the required service takes years of preparation, far greater than the average person realizes. Once acquired, the training demands continual service day and night, for even though an hour schedule be set, an emergency call brings the entire force on duty.

Our contention is that the average citizen gives little thought to this important branch of service. He never thinks of the hospital until misfortune besets him and he enters upon a new experience. Frequently when he leaves he complains of what he terms inattention. His lack of knowledge of real hospital service unfits him to appreciate the real attention he has received. Patients should bear in mind the fact that nurses are but human beings and responsive to kind and courteous treatment. Although they endeavor to serve all faithfully, the effect of their ministrations, has a somewhat different appeal to the gruff crank than it has to the gentle appreciative patient. Out of consideration for the splendid corps of attendants at each hospital, we urge the public to become more familiar with the greater work that is being done. In other words, do not wait until you are ill to visit the hospital, but go today. You owe it to yourself to take a greater interest in this particular service.—The Kenosha Herald.

BY THE WAY—

It is said that some of the New England towns are beginning to find existence difficult because of the passing of the country doctor. One Bay State town, it is reported, has undertaken to relieve its need by subsidizing a physician, if that is necessary to induce one to locate there. The Chicago Journal says:

"The country physician has always been the main pillar of his community. His services are as much essential to the continuation of community life as to preservation of the life of the ailing individual. The services of the preacher are desirable once a week, the teacher is required for from seven to nine months a year, but the aid of the physician must be available twenty-four hours a day, 365 days in the year.

"The country doctor is much more than a dispenser of medicine and mender of broken bones. He is welfare worker, giver of charity, guide, philosopher and friend. No other man more completely surrenders himself to his calling, none gives more of what he receives, none is closer to his neighbors. The healthy man may scarcely give him a thought as he drives by in all kinds of wind and weather, but the sick man trustingly turns to him as if by instinct."

This writer is the son of a country doctor. Our father practiced medicine through a period of 40 years. He was first a farmer boy, then a school teacher, then a doctor—and a busy one almost to the end of his long life. Recalling our father's experiences, as occasionally he used to relate them to us, we have long entertained the opinion that the medical profession as a useful and even an indispensable factor to mankind has never been fully appreciated. We are, therefore, glad to note that the country doctor is coming back into his own, even down in staid old New England. The half has never been told of the peculiar life and the work of the physician, his responsibilities, the invaluable services he renders to society, and the dangers to which he is often exposed. We quite agree with Dr. S. Wier Mitchell, who, in his "Doctor and Patient," says:

"We still think there remains to be written the simple, honest, dutiful story of an intelligent, thoughtful, everyday doctor, such as will pleasantly and fitly open to laymen some true conception of the life he leads—its cares, its trials, its influences on himself and others, and its varied rewards."

The story which Dr. Mitchell suggested would be a long one. It would be one hard to write, and it would keep the hand of a master pretty busy to make it as complete as the doctor's life would warrant, but, after that, it would be a fascinating story should it give a fair conception of the real life of the plain, hardworking, every day doctor—the doctor who lives among and mingles with his people.

When we speak of the country doctor we do not

refer to the doctor who drives up to the front gate in his car, gets out and rushes into the house, looks at the patient's tongue, feels the pulse, writes a prescription—to be filled at his favorite drug store—and then rushes away to join his club associates.

The doctor to whom we refer is the old-fashioned country doctor who comes in his sulkey, hitches his horse to the front yard fence and walks into the house where, after making sympathetic inquiry about the sick—and the usual examination of the patient, he wraps his medicine in doses sufficient to meet the needs of his case, administers the first dose and remains a little while to study the action of his medicine on the patient.

This old world has become a pretty busy one, but as busy as it may be, it will never become so fast that we shall not need the doctor—the old fashioned country doctor.

Bless his soul. He has his place and his purpose and the more of his kind there are the better it will be for people who are so unfortunate as to get sick.

It is no wonder the New England villagers worry over the disappearance of the country doctor.—The Racine Journal.

ONE PATIENT, ONE ROOM.

The world does move and moves in the right direction in some respects. New York city is building a hospital where every sick person is to have a room alone to himself or herself. Back in the eighteenth century, Chawmette in France, advocated a sensational reform, the placing of all hospital patients in separate beds.

It seems incredible that medical authorities should ever have denied separate beds for the sick, and it seems incredible now that they should for so long have tolerated the system of putting six or ten or more of sick persons in the same room. The time will come when we will look back upon the ward system of caring for the sick as a relic of the dark ages.

Evils sanctified by custom, are not seen as evils, especially if they conform with benighted ideas of economy and money saving.

This hospital reform we may hope to see paralleled by others equally radical and equally demanded by common sense and humanitarian sentiment.—The Milwaukee Leader.

LAYMEN AND PUBLIC HEALTH.

In a memorandum which will come up for action before the house of delegates of the American Medical association at its meeting in Boston next June, the council on health and public instruction of that body recommends that in local medical societies throughout the country, laymen, concerned with public health, should be admitted as associate members in the appropriate sections of the medical societies. Should such a relationship be confirmed by the American Medical association at its forthcoming meeting, far-reaching results, beneficial to medical men and to the lay public alike, may be anticipated as time goes on.—The Survey.

THE JOURNAL CLINIC

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CLINIC OF DR. H. P. GREELEY.

MADISON.

The following three cases illustrate fairly well the varied symptoms that may arise from the same cause. One case masqueraded as gastric cancer, one as pulmonary tuberculosis and one as chronic bronchitis. All were given practically identical treatment and all received complete relief as long as they followed advice.

Case 1. B. C., age 46, married, farmer.

Family history. Father died at sixty of pneumonia, mother seventy-five, living and well except for bronchial trouble. One brother, living and well and two sisters, living and well.

Present Illness. Has been short of breath and has had a severe cough all winter, for a while was laid up so that he couldn't do anything. For the last two winters has had similar attacks but this winter has been unable to throw off the cough. Raises mostly in the morning, white, foamy sputum.

Has had no indigestion and no pain anywhere but is very short of breath, particularly on exertion and has a sense of tightness across the lower part of his chest. Exertion often starts paroxysms of coughing.

For the last few years had been weighing one hundred and seventy-five pounds. This winter, he crawled up to two hundred and seven.

Habits. Smokes a good deal, mostly cigars and has chewed "all his life."

Bowels, regular once a day. Appetite, very good. Sleeps well.

Physical examination shows a well developed and nourished man, dyspneic even when talking. Pupils

regular and react normally. Throat, normal. Nasal passages, normal. Teeth, many missing and the rest in good condition, no pyorrhea. Pulse, 102 sitting, 90 after lying down ten minutes, 120 two minutes after slight exertion (walking to office). Pulse, rapid, regular, low tension. Artery wall not thickened. Heart, apex impulse in the fifth interspace one inch outside the midsternal line. Sounds muffled except at the base, where both sounds are accentuated. Slight systolic murmur at the apex transmitted to the axilla.

Lungs, expansion equal, diminished Tactile Fremitus, diminished resonance at the left base and lower exilla. Many moist rales throughout both bases, breath sounds normal but diminished.

Abdomen, large prominent. Liver, dullness from the fifth rib to two finger breaths below the costal margin. Edge just felt on inspiration. Othewise, abdomen negative, no dullness in the flanks, no edema of feet. Knee jerks, equal and active.

Electrocardiogram showed slight left sided preponderance.

Blood and urine negative.

Diagnosis—Myocardial weakness.

A case sent to me in 1918 for chronic bronchitis. He had taken "barrels" of cough syrup during the last two winters. After one week his cough left him and he lost twelve pounds (some of it edema). About a month of careful regimen with free catharcis, digitalis and rest, he was practically well. Since then he has had some relapses due to his over exertion and his habit of over eating.

Case II. E. M., age 56, retired housewife.

Family history. Father 81, living and well. Mother died of old age. Three brothers who have stomach trouble and one sister who has stomach trouble.

Past history. Diphtheria as a girl, no scarlet fever, no rheumatism, no quinsy sore throat or frequent attacks of tonsilitis, no measles. Has had four children, all normal births except the last one, when she is said to have caught cold in her bowels and was confined to her bed for one month.

Had an operation for gall bladder disease five years ago, since then, she has not suffered from any acute attacks of gall stone colic, previously she had had several.

Habits. No coffee, tea once a day. Sleeps fairly well on one pillow. Bowels, very much constipated.

Present illness. Present illness dates back fourteen years, since when she has been unable to eat sour food without vomiting it. She has no pain or much of any nausea. Milk is another food which she cannot eat without its curdling and coming up. She has suffered for years from constipation. She is afraid she has cancer.

Aside from the above, the kind of food or time of eating has nothing to do with her trouble. In addition, she is short of breath on exertion, quite extremely so on going up stairs or walking, her stomach hurts and she has a bloated feeling around her waist. She does not suffer from dizziness. Has never had any swelling of ankles.

She has gained about fifteen pounds in weight since her operation.

Physical examination. Examination shows a well developed and nourished woman, rather sallow complexion, skin clear, hair dry and thin, eyebrows rather sparse. Pulse rate, 85 regular, low tension, fair volume. Artery wall slightly thickened. Pupils small, contract normally.

Haemogloblin 70. Throat, tonsils buried, chronically inflamed and enlarged. Slight pyorrhea around one tooth. Upper teeth false. Tongue is clear but rather large and swollen.

Lungs, negative. Heart, apex impulse just outside the mid-clavicular line, in the fifth interspace, slight enlargement both to the right and left by percussion. First heart sounds at the apex, snapping in quality proceeded by a slight roll. No palpable thrill.

Abdomen, fairly lax, thin wall, marked tenderness in epigastrium and over right flank. Edge of liver rather tender, easily felt on deep inspiration. Lower bowel slightly tender. Sausage shaped mass felt on the sigmoid. Knee jerks, active and equal. Very slight pitting of both tibia over lower third.

Blood and urine negative.

This case was to the patient purely one of stomach trouble with a fear of cancer. By careful questioning the history as brought out proved to be typical of myocardial weakness and the examination showed a mitral stenosis and chronic passive congestion of the liver. After one week of digitalis and enforced rest, all stomach symptoms disappeared.

Case III. J. F., age 54, married, farmer.

Family History. No tuberculosis, cancer, or heart disease in family.

Past history. Measles and scarlet fever in childhood, otherwise, has always been strong and healthy up to three years ago when he was operated on for appendicitis. Since the operation he has gotten rather stout. Last year he weighed about 165 lbs., his average weight has been about 150 lbs.

Present illness. Present illness dated from the "Flu" which he had in December, 1918. He was in bed five days, unable to work for two weeks and has coughed on and off ever since particularly during the winter months. Has never spit up any blood and raises rather frothy, greenish sputum, mostly in the morning and evening. Has slight pain and a feeling of tightness over breast bone.

Breath, very short particularly on exertion. No swelling of the ankles and feet, never short of breath until he had "Flu". When he goes up to throw down his hay, he gets entirely winded, and has to wait several minutes before he can lift his fork. Has very hard coughing spells for five or six minutes. No headache, no palpitation. Sleeps well at night, doesn't have to cough during the night, exertion always starts his cough. Change of position, doesn't affect it.

Habits. Appetite, good. Bowels regular. Coffee once, tea twice a day. Doesn't smoke or chew. Has never used liquor to excess.

Physical examination. Examination shows a well

developed and fairly nourished man. Pupils, equal, regular, react normally. Tongue, clear, throat, negative. Five or six bad teeth, some ulcerated.

Heart, slightly enlarged to the right and left. Sounds muffled, poor quality, no murmur. Pulse, 90 regular, fair volume, low tension.

Lungs, equal expansion, slightly diminished tactile fremitus. No dullness, fine consonating rales throughout both bases, front and back.

X-Ray of chest shows no area of consolidation but considerable peri-bronchial thickening throughout.

Sputum negative for tb, is brownish mucopurulent in character as of chronic passive congestion.

Abdomen, negative except for palpably enlarged liver. No edema of feet or legs. Knee jerks, equal and active.

Wassermann examination negative.

Blood and urine negative.

This patient thought he had tuberculosis and was prepared to be told that he must give up and go away to a sanitarium.

Apparently the attack of Flu had injured his lungs producing a probable bronchiectasis and had also weakened his heart, for Digitalis in physiologic doses with a little potassium iodide, resulted in rapid improvement of all his symptoms.

CLINICAL CASE REPORT BY DRS. JOSEPH F. SMITH AND MERRITT L. JONES.

WAUSAU, WIS.

The following case is interesting on account of the multiplicity of symptoms presented and the final diagnosis made.

F. O., female, age 24, was admitted to St. Mary's Hospital January 19, 1921, complaining about an eruption on her face and vulva. Her previous history was unimportant except for the following: She had pneumonia at three different times (eight, four, and three years ago); five years ago she had diphtheria and small-pox. At the age of thirteen she had an appendectomy for acute appendicitis; three months later this wound reopened and the patient was again operated upon; four weeks after this she is supposed to have developed intestinal obstruction and was again operated upon; eight weeks after this she was supposed to have had an abscess in her right ovary and also an abscess higher up on the right side and was again operated upon. Following this she took a trip into the south and four months later was operated upon for adhesions and pelvic abscess; three months after this she was operated upon for a fistula which had followed the previous operation.

Present Trouble. The patient states that two weeks ago she developed tenderness and swelling under the left ear; a day or two later the entire side of her face became swollen; after about a week this swelling disappeared and the patient was well up to four days ago when she developed an eruption over the left side of her face and upon the abdomen; two days later the eruption on the abdomen spread downward and finally involved the vulva. The patient says that she has not had a previous similar attack. She has no pain or other disturbance but says that she generally feels sick.

Physical Examination. Negative at the time of admission to the hospital except for swelling and redness behind the left ear and over the left cheek. Over this area there was a pustular eruption. The abdomen was covered with a mass of pustules which extended down over the vulva; some of these were fresh, while others were almost healed.

General laboratory findings were negative; also the Wassermann.

Under ordinary medication the skin eruption soon began to improve but patient complained of severe pain in the back of her neck and over the left side of her head. At this time she began to run a temperature which varied from normal to 105°; the pulse, however, ranged from only 80 to 110. Gradually she became more somnolent and complained of pain in her back and in her neck. Neurological examination at this time was negative. Examination of the eye grounds was also negative. On January 26th a lumbar puncture was done; the spinal fluid proved negative to ordinary laboratory tests. Widal test negative.

On January 29th the patient had an attack in which she had great difficulty in getting her breath. During the next few days she had several such attacks. These attacks lasted from one to five minutes. The temperature continued to run a picket fence course, reaching as high as 108.5° on January 28th. Following this there was a gradual drop in the peaks of temperature; the somnolent condition gradually disappeared and the patient seemed to be making a slow recovery.

On February 6th, during the night, the patient had two spells in which she broke out in a cold perspiration and complained of pain in the abdomen. She vomited several times and there was bright red blood in the vomitus. The following four days the patient vomited everything taken by mouth and the bowel movements were extremely scanty. There was a general distension of the abdomen and the patient complained of extreme tenderness on palpation. This tenderness she localized in the left upper quadrant. By this time the temperature had receded and at its height reached only 101 with the pulse at 96.

On February 11th the patient began to complain that she could not pass any urine. This continued until on the 13th she became somnolent and at times seemed to be delirious. She complained of great pain in the region of the kidneys. On catheterizing the bladder only one or two ounces of urine were obtained in twenty-four hours. The patient was given the usual treatment, including hot packs, etc. She still complained of pain in the abdomen and was still having attacks in which she perspired freely and showed great weakness.

On February 14th a cystoscopic examination was made and the ureters catheritized. There was nothing abnormal seen in the bladder and the flow from the ureteral catheters was normal. In view, however, of the patient's condition it was thought best to use some intravenous medication; consequently 1000 c.c. of salt

solution and one gram of theocin were introduced intravenously. Following this there was a very marked diuresis, which lasted for twenty-four hours. The patient's condition then became similar to that before this was undertaken.

During the remaining part of February and the early part of March the condition remained practically unchanged; the patient complaining of pain in the abdomen and apparently passing only two or three ounces of urine a day.

On March 15th she complained of a severe earache and was examined by an eye, ear, nose and throat specialist. On the 16th she complained of a marked sore throat and the vomiting which had been absent for three weeks again returned in a very persistent form.

The remaining part of the history is uninteresting except that the patient slowly recovered and was finally discharged on March 29th.

DISCUSSION.

This patient is extremely interesting on account of the multiplicity of her complaints and the clinical findings which accompanied them. The eruption for which the patient was admitted to the hospital was atypical in character. The fact that the lesions were in all stages of development immediately made one think of a dermatitis factitia. When the patient found that we suspected the diagnosis she immediately showed improvement and then began to show constitutional symptoms in order to make the situation more complicated.

At the time that her temperature reached 108.5° one of us was present. The thermometer was placed in her mouth and after a second or two she coughed, removed the thermometer and put it under the bed clothes for only a few seconds and then handed to the doctor, and it registered 108.5°. Without mentioning this the thermometer was again shaken down and placed in the patient's mouth while the doctor sat on the edge of the bed and took the patient's pulse. The thermometer when removed registered 98.5°. Just how the patient was able to make the thermometer register this temperature we were unable to discover. A search of the bed did not reveal any hot water bottle or other apparatus. At no time when she was apparently running these high temperatures did her body feel warm or her pulse go up in proportion to the temperature.

The patient, following this procedure, apparently suspected that she had been found out and for a time the temperature gradually began to recede. At about this time, however, the pain in the abdomen with vomiting and scanty bowel movements began to appear. By this time we were naturally very suspicious of the patient and since the physical condition did not corroborate the above symptoms we simply treated the case expectantly until the phase anuria appeared. For many days it was impossible to find out how the patient was passing the urine although it was perfectly obvious that the kidney function was normal. By careful observation it was finally discovered that she was using the hot water bottle as a urinal. By measuring the amount of fluid placed in the hot water bottle and taking the specific gravity we were able to demonstrate that such was the case and also that she was secreting the normal amount of urine in twenty-four hours.

She felt greatly worried because there was not more attention paid to this condition and finally tried to change physicians. Her brother however, refused to allow her to do this and finally in desperation she developed earache and sore throat in order to get into that department. When, however, she did not strike a sympathetic note she gradually got better and was discharged by us much improved on March 29, 1921.

The question naturally arises as to how many of the numerous operations the patient had submitted to were really necessary.

While under our observation she was easily kept off the use of narcotics although she had apparently had morphine in considerable doses at earlier periods in her trouble.

CLINIC OF DR. V. F. MARSHALL.

APPLETON, WIS.

The two following cases are illustrative of some of the types of the "Acute Abdomen."

CASE I. Henry N., age 32 years, entered St. Elizabeth Hospital, March 14, 1921, with the following history of injury:

While working at the saw at the Hatton Lumber Company, New London, shortly after 8 o'clock A. M. a board "flew back" striking him upon left side superior iliac region of abdomen which immediately incapacitated him. He was visited soon after by the Company Surgeon, Dr. Pfeiffer, who found him in severe shock and for which he was treated. His condition remained the same until late in the afternoon when he was transferred to the Hospital at Appleton which he entered at 5 P. M.

Family history:

Father L., 69, good health.

Mother D, 45, unknown.

Brothers, none.

Sisters, 2 D., early childhood. Causes unknown.
Personal history:

Appendectomy 5 years ago. Fracture left wrist and injury to fingers 4 years ago. Minor injury to distal ends left fingers 2 years ago. No permanent disability. Otherwise negative.
General condition:

Temp. 100 degrees F. Pulse 96 fair quality. Resp. 22 labored.
Physical findings:

Appearance pale; rigidity both recti pronounced. Pain and tenderness on pressure. Ecchymosis left abdominal parietes left superior iliac and left gluteal regions.
Diagnosis:

Acute abdomen. Intestinal rupture. Immediate operation advised and accepted.
Operation:

Ether anaesthesia, Dr. M. J. Sandborn anaesthetist, Dr. Pfeiffer assisting. Median suprapubic abdominal incision. Upon opening abdomen found great amount of free hemorrhage and intestinal content leakage. The intestinal coils were rapidly delivered and systematic examination made. The operation being performed 9 hours after receipt of injury. A double transverse rupture of jejunum was found about the middle portion a distance approximately 3 feet of healthy bowel intervening between the ruptures. The rents were sutured transversely the 1st and 2nd row chromic gut, and the third, linen sutured. Omental flaps were sutured over as a further precaution of security. Provisional tube drainage to cul de sac was institnted. The patient was discharged well April 19, 1921. Appetite and bowel functions normal upon discharge.
Comment:

Considering the interval of time, more than 9 hours which elapsed from the time of injury until surgical treatment was instituted, some elation is manifest to both the patient and those concerned with the treatment instituted.

Case II. Arnold H., Clintonville, Wisconsin, occupation, Farmer, age 25, entered St. Elizabeth Hospital at 9:30 P. M., March 29, 1921.

Family history:

Father L. 53 G. H.
Mother L. 46 G. H.
Brothers 1 L. G. H., 1 D. at age of 3 months.
Sisters 3 D. in infancy.

Chief Complaint:

Began suddenly at about 11 A. M. while in automobile with his mother on way home from city, with severe pain in upper abdomen. Some nausea but no vomiting. Pain has continued since requiring large doses of Morphia (gr. ½) for relief.
Past history:

Measles. Laparotomy 3 years ago. March 19, 1918. (Dr. Marshall) for acute appendicitis with periappendicular abscess internal to caecum and ascending colon. Notes from operative procedure at this time, "right rectus incision, peri-cecal abscess internal, appendectomy, tube drainage, *duodenal ulcer noted upon examination when abdomen opened.*"
General condition:

Temp. 100.6 F. Pulse 82, good quality. Resp. 20 free.
Physical findings:

Abdomen marked rigidity abdominal muscles especially right upper portion. Tenderness and pain on pressure. Otherwise negative.
Diagnosis:

Acute abdomen, peptic-ulcer, sub-peritoneal perforation. Immediate operation advised and accepted.
Operation:

Ether anaesthesia, Dr. M. J. Sandborn anaesthetist, and Dr. Jefferson assisting. Scar of previous laparotomy excised. Upon opening abdomen to expose duodenum it was found that the gall bladder was greatly elongated and adherent to stomach, duodenum and transverse colon. After isolating viscus it was deemed advisable to remove it and a cholocystectomy was rapidly done. A pin point perforation with pronounced infiltration of the duodenum was found in the 2nd portion. Perforation of duodenum was closed with mattress sutures with omental tag sutured over. A posterior gastroenterostomy was then done. Tier suture abdominal walls with silk worm gut tension sutures. *No drainage.* Patient was discharged recovered and returned to his home, April 13, 1921.
Comment:

Considering the length of time which elapsed from the time of perforation until the closure of the "leak" this patient also has great cause for rejoicing. The protective action of an adherent gall gladder covering the area of perforation was most beneficial in the end results upon morbidity and mortality.

Case III. Baby Elaine S., entered St. Elizabeth Hospital, March 28, 1921, age 5 months.

Family history:

F. L. 30 good health.
M. L. 25 good health.

Chief complaint:

Began 2 weeks after birth with vomiting after feeding. Occasionally there was but one copious vomitus, and then at other times several vomitings until next feeding. Baby weighed ten pounds at birth, and there has been but one pound gained in weight since.
Past history:

Baby was breast fed following birth which later was changed to bottle feeding. Upon change to bottle feeding gastric symptoms became more manifest and many varieties of food have been used without benefit.
General condition:

Patient shows extreme emaciation. Pale in appearance. Pulse 110. Feeble quality. Respiration 24, free.
Examination:

Reveals a thin and emaciated body. Heart and lungs negative. Prominence of epigastric region and tumefaction of the pyloric end of stomach was thought to be palpable. Gastric wave perceptibly irregular.
Skiagram:

Pyloric-stenosis, hypertrophic form.
Operation:

Ether anaesthesia, Dr. Sandborn anaesthetist. Sister

Clementia assisting. Right rectus incision. Stenosis of pylorus evident, but no pronounced hypertrophy. Stomach greatly dilated. Upon incising area of stenosis longitudinally mucous surface was inadvertantly opened. Incision now extended upon each side well into duodenum and stomach. Pyloroplasty now done with suture transverse to incision. First and second rows chronic gut, 3rd linen. Omental flaps sutured over area of incision. 3 silk worm gut tension sutures. Discharged well convalescent, March 17, 1921.

Note:

Patient at this writing has gained four pounds in weight.

Case IV. Mrs. F. W. R., age 58, New London, Wisconsin, entered St. Elizabeth Hospital, April 4, 1921. Occupation, housewife.

Family history:

M. D. 57 cardiac disease.

F. D. 62 pneumonia.

2 B. L. and well.

3 B. D. 1, 32 appendicitis; 1, 48 pneumonia; 1, 64 asthma.

2 S. L. and well.

None dead.

Personal history:

Measles, menstruated at 15 years, regular, no dysmenorrhea. 8 para, 6 living. No miscarriages.

Past history:

14 years ago, "inflammation of the bowels." Sick 3 weeks, recovery. Constipation marked since an attack of "flu" 2 years ago which was of four weeks duration. Erysipelas 1 year ago, 10 days duration, recovery.

Present illness:

Began 2 years ago with pain over left hip and back accompanied with nausea and vomiting. Periodic attacks of pain over left kidney and back, several hours duration. Frequent urination especially at night. Appetite good. Bowel movement constipated. Has some gaseous eructation and pyrosis, but no especial loss in weight.

Examination:

Reveals a short stout individual, weighing over 200 pounds. Temperature 99 F. Pulse 88. Respiration 18. Blood pressure, Systolic 160, Diastolic 90. Pyorrhea alveolaris lower incisors. Tonsils hypertrophied. Chest and lungs negative. Second aortic sound slightly accentuated. Abdomen negative except for small umbilical hernia with incarcerated omentum. Slight tenderness over right hypochondrium. Tenderness upon palpation and pain on percussion over left kidney especially marked left costo-vertebral angle. There is present a moderate rectocele due to a lacerated perineum.

Blood examination reveals:

H. B. 80%.

Red cells 5,270,000.

White count 10,400.

Differential:

Polys. 58.

Small lymphocytes 10.

Large lymphocytes 7.

Eosinophiles 3.

Large mononuclear 7.

The urine is clear, straw colored. Specific gravity 1025. Reaction acid. Slight trace of albumen. Negative to sugar. Few hyaline casts. Leucocytes many. Red cells few. Epitheloid cells many. Crystals many calcium oxylate.

Skiagram reveals calculus irregular in outline in left kidney.

Cystoscopic examination:

Bladder mucosa, normal in appearance. Urethral catheter passed unobstructed to pelvis left kidney. No difficulty encountered in passage of urethral catheter to right kidney. Kidney secretion of left was ½ to that of right. Examination of urine of right was negative. Left, contained many leucocytes and red cells, albumen four plus. Few hyaline casts. Kidney function with phenol-sulphone-phthalein right after interval of an hour, normal. Left 30%.

Diagnosis:

Pyorrhea alveolaris.

Calculus left kidney with pyelo-nephritis.

Umbilical hernia.

Cholocystitis.

Rectocele.

Operation:

Ether anaesthesia, Dr. Sandborn anaesthetist, Sister Clementia assisting.

Nephrectomy was advised and accepted. Thru a nephrectomy incision and with great difficulty on account of a peri-nephritis the kidney was delivered which was found enlarged. Ureter was well isolated, and ligated low down. Double ligation renal vessels. Tube drainage. Chromic gut closure deep sutures. Silk worm gut tension sutures. Patient was dismissed, recovered, April 19, 1921.

Upon section of kidney calculus irregular in outline, size of almond was demonstrated.

Case V. Mrs. George D. Clintonville, Wisconsin, entered St. Elizabeth Hospital, April 1, 1921, age 30 years.

Chief complaint:

Began 17 days ago with acute pain in abdomen, for which family physician was called. Following administration of some medicine patient vomited. Last menstruation was August, 1920. Is now somewhat over seven months pregnant. Upon March 19, had a convulsion of about 15 minutes duration. Has headache daily and which preceded attack. Vision is now defective.

Family history:

F. L. 70 good health.

M. L. 60 good health.

3 B. living, good health.

2 S. living, good health.

Past history:

Has had measles and scarlatina. Otherwise negative. Menstruated at 13, no dysmenorrhea. "Flu" March, 1919, one week duration. Apparent recovery. Married at 29. Last menstruation August 15, 1920, few days duration.

General condition:

Temp. 98.4 F. Pulse 120 soft and compressible. Respiration 20, free. Blood pressure, systolic 210, diastolic 130. Well nourished.

Physical findings:

Tongue coated, pronounced tremor. Mouth negative. Chest negative. Pronounced tremor of fingers. Patellar reflexes exaggerated. Some tenderness in left pelvic region. Uterus enlarged. Patient stated foetal movements have not been very active and very slight for two weeks. Foetal tones not discernible upon auscultation. Uterus enlarged above umbilicus. There is present oedema of the lower extremities. Kidney excretion markedly reduced.

Examination of urine reveals almost complete solidification upon boiling. Specific gravity 1040, acid reaction, no sugar. Many granular and hyaline casts. A retinal examination reveals marked retinitis with some atrophy of the macule (Dr. Rector).

Cystoscopic examination reveals no abnormality in appearance of bladder mucosa or ureteral openings. Phenol-sulphone-phthalein test for renal function over a period of 3 hours reveals, 15, 17, 19% for both kidneys.

Diagnosis:

Toxaemia of pregnancy with probable death of foetus. Caesarian section appeared to be the operation of choice on account of closure of the os and condition of the patient. Novocain anaesthesia appeared to be the anaesthetic of choice on account of the pronounced diminution of the renal function.

Operation:

Novocain anaesthesia (½%). Dr. N. P. Mills and Sister Clementia assisting. Suprapubic abdominal incision through the abdomen walls. Uterus brought forward injected sub-peritoneally with ¼% novocain. Incised longitudinally and a macerated foetus of approximately 7 months delivered. Double chromic suture of uterine walls. Tier suture abdominal walls with 4 silkworm gut tension sutures. Patient discharged well convalescent, April 18, 1921.

ST. JOSEPH'S (MILWAUKEE) MEDICAL AND SURGICAL CLINIC.

Contributed by Drs. Jermain, Echols and Stratton.

DR. L. F. JERMAIN,

Subject—Cardiospasm.

Our patient this morning is a Sister of Charity, whose family and past histories are uneventful.

For the last three years she has been complaining of difficult deglutition. Her trouble came on rather suddenly and there was at once as much difficulty in swallowing liquids as there was in swallowing solid food. At first there was simply distress in swallowing and a sense of pressure beneath the lower end of the sternum. Later regurgitation of food began, which constantly increased until at present there is a return of most of the food eaten. Regurgitation is particularly distressing at night, keeping the patient awake and spitting the greater part of the time. While eating she is in the habit of taking a mouthful of food, chewing it, then swallowing it and washing it through with a glass of water. As a result of all this there has been considerable under-nourishment and emaciation.

General physical examination is negative. Fluoroscopic examination with barium meal shows greatly dilated esophagus. The dilatation is uniform throughout and the barium mass terminates in a well rounded, conical point at the hiatus esophagi.

The radiogram which you see in the box shows distinctly the obstruction to the cardia, the uniform filling of the esophagus (almost its entire length) and the characteristic, smooth, conical termination of the barium mass at the hiatus.

The next radiogram which I show you is one of esophageal carcinoma. You readily see the striking difference in the appearance of the two plates. In the latter there is marked irregularity of filling, only a moderate dilatation above the stricture and the strictured portion is distinctly tortuous and irregular in appearance.

From the history obtained of the development of this disorder, the good condition of the patient after three years of suffering and the result of the fluoroscopic and radiographic examinations, we conclude that she is suffering from a cardio spasm.

DISCUSSION.

Esophageal obstruction may be organic, or functional; organic obstruction may be intrinsic or extrinsic, that is, it may be the result of lesions within the esophagus, or in the neighboring structures.

The intrinsic conditions may be divided into benign and malignant. The benign lesions most common are strictures, the result of the action of corrosive substances, such as acid or alkalies; exceedingly hot food; syphilitic ulceration; esophageal diverticuli, or foreign bodies. Malignant obstruction results from carcinoma, which is most frequently located in the lower half of the organ.

Extrinsic conditions may be aneurism of the aortic arch, mediastinal tumors, enlargement of mediastinal lymph nodes, etc.

Functional obstruction is known as cardio spasm. The differential diagnosis is based upon a carefully obtained history and Roentgenray examination. A history of sudden onset of difficult deglutition in which the difficulty of swallowing liquids is equally as great as that of solids from the very onset is of great value in distinguishing organic from functional obstruction. The cardio spasm may exist for many months, or even years without much deterioration in general health.

while carcinoma leads to rapid and early cachexia and emaciation.

In organic stricture of any type the patient first complains of difficulty in swallowing solids only and not until the obstruction becomes complete will liquids be retained. Fluoroscopic examination of the barium filled esophagus is of greatest value in differential diagnosis. In cardio spasm the gullet is uniformly dilated, the barium shadow is even, smooth and terminates quite abruptly and evenly in a dull point at the hiatus esophagi, while in organic strictures, particularly those the result of carcinoma, filling defects are irregular and uneven. In no case in which difficulty of deglutition is complained of should any instrumentation be resorted to until careful X-Ray examination has been made. In any case much patience must be exercised in the passage of bougies and under no condition should much force be employed, except when the instrument is properly guided along a previously swallowed silk thread. Considerable difficulty may be experienced in passing the bougie through the spastic cardia and here again much patience and gentleness is required. When once an olive tipped bougie of any size has been passed into the stomach the gradual passage of large sizes is a matter of little difficulty. As soon as the largest size bougie has entered, this hydrostatic bag, devised by Plummer of the Mayo Clinic, is introduced and the cardiac end dilated.

This patient has had olive tipped bougies introduced into the stomach for the last three days. Today I shall attempt to use a large sized one and, if successful, shall immediately introduce the hydrostatic bag and dilate. You see both the large size bougie and the hydrostatic bag were consecutively introduced with little difficulty. Care must also be exercised in the dilatation as rupture of the cardiac end of the stomach has been reported. It is better to gradually dilate at repeated sittings than to attempt to complete dilatation at one sitting. Great relief is experienced in all these cases and in the large majority a permanent clinical cure is effected after good dilatation. The results obtained by this procedure are most gratifying and one can hardly find a more grateful class of patients than those relieved of this most distressing condition.

DR. CHESTER M. ECHOLS.

SUBJECT—*Prolapsus Uteri.*

History:

This patient, Mrs. B—— is a corpulent woman of 62 years, who comes to us for operation on account of a complete prolapse of the uterus which has been coming on for the past 20 years or more.

No serious illness except small-pox in childhood Menstruated at 12. Married at 24. Had 4 children and 1 miscarriage. Third child born by forceps delivery. Last child birth 20 years ago. Menopause at 45. Prolapse began to make itself felt shortly after the forceps delivery, but was not complete till a few months ago. She has tried to overcome the prolapse by means of a broad sling attached to a waist belt. Has always done hard manual labor.

Examination:

Patient is a large robust woman weighing 180 lbs. Walked into hospital. Pulse and temperature normal. Blood pressure 165-85. Head, neck, and special sense organs neg. Teeth artificial. Lungs hyper-resonant. Heart normal as to size, sounds, position, rate, and rhythm. Abdomen slightly pendulous. No tumor masses visible or palpable. Slight tenderness under right costal arch.

Uterus wholly prolapsed, with the usual cystocele and rectocele. Cervix patulous but not ulcerated. Corpus uteri small. Adnexa not palpable.

The cervix, you will observe, can be dragged out for a distance of 6 or 7 inches from the vulva. The canal is patulous, and admits my index finger fully an inch. A surprising feature is that we have neither erosions nor ulcerations. In total prolapse of long standing there is nearly always ulceration about the cervix from friction against the clothing. In such cases one also finds dry, hard scales as in "ichthyosis," due to the absence of glands in the vaginal lining. In this patient we have neither. The explanation is that her total prolapse is of only a few months' duration. In attempting to prevent the uterus from hanging too low as she walked, she has resorted to a primitive device that has been tried by women since pre-historic times, namely, the use of a wide perineal hammock fastened to a belt at the waist.

This woman has been thus far surprisingly free from vesical symptoms, considering the extent of her cystocele. As I introduce this bent uterine sound into the urethra, you will observe that its tip comes down in front of the cervix as far as the external os. This gives us sufficient warning not to attempt an amputation of the cervix.

Now, what operation shall we do to cure this patient? Hysterectomy, did someone say? Heaven forbid! Of all the operations in our repertory,

hysterectomy is the one we should not do in prolapse of a senile uterus like this. The Wertheim-Watkins interposition operation is likewise wholly unsuited for such a case. I shall proceed first of all, to do an anterior colporrhaphy, removing a large ellipse of the skin-like mucosa from the anterior wall. We now close this denuded ellipse with interrupted chromic stitches, being careful to pick up the tough layer of sub-mucous fascia, which is such an important support of the bladder. This done, we push the uterus up into the pelvis and do a radical perineorrhaphy, using a modified Hegar method. The vagina, you will observe, is now as narrow as that of a 12-year-old girl.

This patient cannot be considered cured without a laparotomy which I am now proceeding to do. Palpating the gall-bladder through this incision, I find it full of stones. Holding the gall-bladder against the abdominal wall with one hand leaves my other free to make a button-hole incision through the skin, muscles, and fascia directly over it. We now stretch the button-hole with a large artery forceps, the blades of which seize the fundus of the gall-bladder and drag it out into plain view. This technic enables us to remove the gall-stones with the loss of only a few minutes of additional time, and without adding appreciably to the shock of an already extensive operation.

The small uterus, as you see, can easily be dragged out through our incision. The long overstretched vaginal walls account for its great mobility. We now have choice of many satisfactory procedures in dealing with this atrophic uterus. The technic I shall use here is as follows: After splitting the uterus in the midline and thoroughly excising the mucosa, each lateral half is pulled through a button-hole made in the abdominal fascia on each side of the incision and sewed to its fellow by means of chromic stitches. This method at least insures a permanent anchorage.

Comment: Convalescence uncomplicated. Patient left hospital, in good condition, in about three weeks.

DR. F. A. STRATTON.

SUBJECT—*Surgical Kidney.*

Miss A. P. Age, 15 years. Factory employee. Chief Complaint—Pain in back and over the left iliac crest, which has been almost constantly present for the last six months. Attacks usually last about 1 hour, and have been increasing in frequency and severity, and now occur every two or three days. They are occasionally accompanied by vomiting. She has never had any urinary frequency, and has never noticed any hematuria. Family history has no bearing on the case.

Past History:

Does not remember having had any of the ordinary diseases of childhood. Has had frequent attacks of tonsilitis, up to three years ago, at which time tonsils were removed. Has never had rheumatism. She complains of frequent headaches and occasional dizziness. She suffers from severe pain during the menstrual period which usually lasts three days with rather profuse flow.

Physical Findings:

Well nourished young female of good color. Scalp normal; eyes, pupils equal and react to light and accommodation. Teeth, in good condition. Throat, normal. Neck, very slight bilateral uniform thyroid enlargement. Thorax, expansion fair and equal. Respiratory sounds normal throughout. No rales. Normal percussion note throughout. Heart, borders normal, no murmurs. Abdomen, normal in contour, no tumors, no tenderness. Urological examination, Dr. Sargent. Catheterized specimen of urine shows many pus cells and bacteria, both cocci and bacilli. Cystoscopic examination reveals perfectly normal bladder, except for exudation of a thick stream of pus from the left ureter. Both ureters were catheterized full length and a divided half hour functional phthalin test was made with an excretion of 35% on the right, and not even a trace on the left. X-Ray plate shows a small single stone in the region of the pelvis and a very large kidney.

Preoperative Diagnosis:

Impacted renal stone. Pyonephrosis, dead kidney. Operation performed by Dr. Stratton. Nephrectomy with excision of 4 inches of ureter. One cigarette drain. Pathological findings, large thin wall. Pyonephrotic kidney containing ½ pint of thick offensive pus. Large stone in pelvis; thickened infected ureter.

COMMENT.

Patient made a rapid recovery and left the hospital with wound well healed. The unusual thing about this case was the absolute absence of urinary symptoms, with nothing about her history to call attention to the urinary tract except the pain along the iliac crest and back occurring at intervals. The pain in no way resembled a renal colic as it was dull and aching in character.

THE POINT OF THE STORY.

"When I was a little child," the instructor sweetly addressed recruits, at the end of an exhaustive hour's drill, "I had a set of wooden soldiers. There lived a poor little boy in the neighborhood of Long Branch, and one morning after I had been at Sunday school and listened to a stirring talk on the beauties of charity I was softened enough to give them to him. Then I decided I wanted them back, but my mother said, "Don't cry, Eddie, some day you will get your wooden soldiers back—and believe me, you lob-sided, mutton-headed, googgus-brained set of certified rolling pins, that day has come."—*Langley Field Times.*

PREVENTIVE MEDICINE

Edited by
W. D. STOVALL, Chairman
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SOME ASPECTS OF SCHOOL NURSING.

BY MISS EMILY ISABEL ELLIOTT.

The school nurse has come to be generally considered a necessity for every school community, although she may have many other health activities to look after as well; but if there must be a choice between that of the medical inspector and the nurse, the choice invariably falls upon the latter.

The reasons for this are obvious. Only the larger communities are able to command the services of the trained medical man, and then his powers are limited, for he cannot perscribe, nor give treatment to the children he finds needing such care without incurring a certain amount of criticism from the physicians who usually attend the families to which these children belong, and if there is no regular family physician he is apt to be criticised anyway, moreover the financial compensation is rarely adequate for a doctor's services.

The rulings of Boards of Health and Boards of Education often exclude a child from school for conditions too trivial for the time and attention of a doctor, e. g., pediculosis and the minor skin diseases, but which with proper treatment the child is allowed to remain in school.

Such exclusions in some types of families are apt to be frequent, and to seriously affect the child's school life and school work, as well as his health.

If he is merely sent home with a printed notification, (which is often lost on the way, or put on the wall as a mark of distinction,) and no follow-up work done to see that the child receives proper attention, little, if any good has been accomplished, so far as the physical condition is concerned, but the expense of his education goes on.

Meanwhile the child plays on the streets and associates with the other children after school hours, so he is almost as much a menace to them as if he were in school; absence is made legitimate and truancy encouraged.

Medical inspection alone, without follow up work on the part of the nurse, gets a large per cent of children out of school, without being able to get them back, and it is the nurse's task to see that every means within her power is used to get the child as quickly as possible into a condition that will allow him to return to school.

A part of the routine work of the school nurse is:

(1.) To shorten the period of the child's exclusion because of minor contagious diseases.

(2.) To explain, when necessary, to parents the nature of the defects found, and to urge them to consult with their family physician about them, and to help them find the proper means to remedy such defects.

(3.) By close inspection of her schools, endeavor to detect suspects of communicable disease, and thereby do her share in protecting the child and the community.

(4.) To instruct the mother when need be, in the care of the excluded child.

(5.) To note unsanitary conditions of school buildings or grounds and to do all within her power to remedy them, either by suggestions or by reporting to the proper authorities.

(6.) To help the children in forming health habits and to teach them simple hygiene and sanitation.

(7.) To look after the health in general, so far as the school is involved, and to urge thorough physical examinations and treatment of children suspected of organic disease or for any reason in need of such examination.

Under no condition does a nurse make a diagnosis nor suggest a line of treatment, but it is her duty to make every effort to obtain care for a child needing it, if necessary helping to take him to the doctor or clinic if there is no one else able to do it.

Just here another phase of the school nurse's work presents itself. In making these home visits the nurse comes to know something of the home conditions of her school children, and often with the over-burdened mother, or the mother who means well, but does not appreciate the need, the tactful nurse can help with suggestions or demonstrations in the care of the pre-school child, or of the little baby, or what is of very vital importance, helpful attention along pre-natal lines.

We all know that far too many thousands of women think a doctor is not necessary to the pregnant woman until time for delivery, if he is then, provided there is an available midwife. The

nurse with sense and tact, will, when she finds such conditions, eventually convince a woman that the best thing for her to do for herself and her family, is to put herself under the care of a good doctor.

It is not the nurse's province to suggest the individual doctor, but she can always give a list of names from which a choice can be made. It is not nursing ethics, and it is most unprofessional for a nurse to comment in the presence of a patient, regarding the qualifications of a physician or surgeon, and it is not wise to take the responsibility of choosing the doctor for anyone.

The boundry of the nurse's opportunities for service increases as acquaintance and confidence with her people grows, whether it be to show the parents of a boy or girl the folly of allowing them to leave school prematurely to go work, or to discuss the sanitary conditions of the home, or to dissuade the family from handing the life insurance policy over to the undertaker to pay funeral expenses. Funeral expenses sometimes amount to the full value of the policy, the writer knows of more than one instance where a six hundred dollar policy was used up that way on a hundred dollar funeral.

The qualifications of the good school nurse are somewhat exacting; with the demands and the possibilities of the work before her, a young woman needs first of all good health, she should be of an understanding mind and sympathetic nature, she needs to be able to meet many kinds of people, of all classes and conditions, and to like *people;* she should be direct and to the point, at the same time tactful, very patient and able to hold on in order to get things done, and above all she must have a love for children.

The school nurse must be a graduate of a good training school connected with a general hospital, and should have some experience with children's diseases and contagion; if she has had social service training, some experience in visiting nursing, and private nursing and a knowledge of child-psychology so much the better.

The school-nurse needs to be informed on child-welfare movements, infant mortality, legislation for women and children, and regulations regarding the employment of children in her community.

A knowledge of the various agencies interested in different forms of welfare is also essential, such as the clinics dispensaries, hospitals and homes for the care of those needing help, not forgetting the juvenile court and its function; and she must be willing and able to work and co-operate with each and all of these as needs be.

THE RELATION OF THE HEALTH OFFICER TO THE PUBLIC HEALTH NURSE IN COMMUNICABLE DISEASE CONTROL.

BY DR. LOUIS DORPAT,

DEPUTY STATE HEALTH OFFICER,

RHINELANDER.

The public health nurse who is determined to help prevent the spread of communicable diseases can accomplish much if given proper support by health officers. Without that support she can accomplish little.

Recently in a Wisconsin city, a public health nurse found her efforts in this direction almost nullified through the refusal of the commissioner of public health to follow up her work. She was working in his own department; he had confidence in her ability and approved of her work. There was no hostility or antagonism between them.

This nurse found a considerable number of cases of what she thought was scarlet fever and other communicable diseases. As the cases were mostly mild, no physician had been called and no quarantine had been established. Not only the well members of the families but the patients themselves were in free contact and communication with many other persons, the natural consequence being a rapid spread of the diseases. The nurse's suggestion to the parents of the sick children that a physician be called to determine the nature of the ailment and take the proper steps to establish quarantine, if necessary, was almost invariably met with the reply, "My child does not appear to be very sick. I do not think that its condition requires the attention of a doctor, and I can not afford to pay doctor's bills unless it is really necessary." That they also had a duty towards others did not occur to them. Moreover, when this duty was indicated, it did not impress them.

As the nurse had neither authority to establish quarantine nor to make a diagnosis, nothing was left for her to do but to report the cases to the commissioner of public health. This official, however, declined to follow up the nurse's report by an investigation.

To be entirely fair, it may be said in his defense, though by no means to his vindication, that the cases reported by the nurse were numerous and that the commissioner of public health was on a salary which would not nearly pay him for the visits called for by the nurse's investigations and reports. Yet it can not be denied that he failed to perform a duty which was distinctly his and that of no other person.

Each time the nurse came to him with a report of a new case not diagnosed and reported by a physician, the health commissioner merely said, "Get them to send for a doctor." "I have tried my very best, doctor, to get them to do that," the nurse would answer, "but they absolutely refuse to do so." "Make them do it. I can not run after all those cases."

And there the matter rested. Communicable diseases in considerable number, not under quarantine, were present in the community with the knowledge of the commissioner of public health, and nothing was being done to protect the citizens, particularly the children, against contagion, suffering and possible death. That such a condition can exist in a supposedly enlightened community is almost inconceivable, yet the facts speak for themselves.

If this commissioner of public health could not afford to make the necessary investigations at the salary he received, he, as an honorable man and good citizen, not to mention his obligations as a physician and health officer, should have put the matter before the proper city officials, describing the situation and asking for proper remuneration for the work necessary to meet the conditions. It is entirely probable that the requested increase in salary would have been granted. In case it would have been denied, the only honorable course for the health commissioner would have been to offer his resignation. Unfortunately, it must be admitted that a number of health officers do not desire to do much work, irrespective of the amount of salary they receive. Some of them would rather hang on at a small salary with the privilege of doing very little than to receive an increase of salary and work harder.

Can nothing be done to improve the method of co-operation between the public health nurse and the health officer so that the burden of investigating suspected cases found by the nurse will not be too heavy? Should the parents of children with communicable diseases be permitted to escape all responsibility? Can nothing be done to compel them to call a physician at their expense to determine whether members of their family are a menace to the public health? Would it be unreasonable to compel them to do what appears to be prompted by every requirement of propriety, fairness and justice? If reasonable, how can it be accomplished?

There is a solution, and it is this: If the health officer will give the nurse permission and authority to placard houses in which she suspects communicable diseases, not with a regular quarantine card, but with a "disease suspected" card, (for example "Smallpox Suspected," "Scarlet Fever Suspected," "Measles Suspected," "Whooping Cough Suspected," "Diphtheria Suspected") the perplexing problem will be practically solved. By the use of these cards the burden of proof will be largely thrown upon the family having the communicable disease but indifferent to the spread of the same.

Any competent public health nurse, though she has no legal right to make a diagnosis, can recognize many cases of smallpox, scarlet fever, measles, whooping cough, and other communicable diseases. There is no reason why she should not be permitted to post these "disease suspected cards." It would be very advisable to have her do so, even if the health officer intended to follow up all her cases with an investigation. The card tends to cut off contact between the infected home and the outside and the sooner this is done in every case the better. Thus many epidemics would be prevented. When such a placard has been placed on their house, most persons would probably call a physician to secure a diagnosis. If, however, the family should not be heard from within a certain time, the health officer should not fail to make a visit. This is a duty he simply can not escape.

While there is no rule or regulation of the State Board of Health which prescribes the use of the "disease suspected" placards it is within the legal right of a city, village or town board to enact a local ordinance whereby these suggestions may be carried out.

ADEQUATE MEDICAL SERVICE FOR A COMMUNITY.

Three indispensable services—medical teaching, preventive medicine and diagnosis and treatment—W. H. Smith, Baltimore (Journal A. M. A., April 16, 1921) says, we shall always need. In spite of the constant struggle by the medical profession to keep pace with its own development and the demands of public welfare, nevertheless we may view with pride the record of American medicine, its educational institutions, its investigators, its clinicians, its surgeons, its hospitals and its national organizations; but there are weak points in the system. There is an ever increasing number of associations—state, sectional, national and international. Each is working along its own lines on some phase or phases of the common problem. The result is not infrequently overlapping, duplication and occasionally a crossing of purposes, with the consequent waste of time, energy, money and confusion. It is apparent that if a well-balanced program is ever developed, in which all of the various activities are coordinated as they should be, then there must be closer relationship between the many organizations and agencies in order that the three services—education, prevention, treatment—may be more helpful each to the other. None of these should discontinue or turn over to this or any other organization the special problems on which they are working; but it is essential that there be more team work. Most of these organizations are working on problems peculiar to their own special fields, but many of them also inaugurate movements from time to time which have to do with a great public problem, in which we are all interested. There are now too many uncorrelated efforts for the settlement of these great questions of public health, and there must be greater cooperation and more intelligent directions of these movements if we are to emerge with a general program understood and backed by all.

The subject of hospitalization is discussed at great length by Smith. He asks: "Are we to go on with our present methods of hospitalization, or shall we determine what is needed to strengthen the present system and attempt to supply the deficiencies?" In dealing with the need of reform in hospitalization, one of the most important problems is how to provide adequate medical service to the rural community, now too frequently without either physician or hospital. Must the rural population still depend on the hospital of the city, often too remote for emergencies, or is the traveling clinic to be relied on? One of the most important factors in the developments of leaders in medicine and surgery is and always has been the hospital service. What is to be done for the average man, cut off from hospital privileges?

It would seem to be a short-sighted policy to continue to spend millions for the benefit of the young men learning to become physicians and to pay no attention to them after graduation, with no provision for continuing the education of the average man whose opportunities are limited and who is bound to fall behind unless some means are found to keep him abreast of the times. Over-specialization is tending to fill the curriculum of the average medical school with too many specialized courses.

The man who has acquired a thorough knowledge of the general, fundamental, accepted principles and the ability to reason from them, is a much better trained man than he who has acquired a smattering of alleged facts relating to every phase of medicine and its special branches. Another result of the present system is that men are trained to rely more and more on the laboratory findings and the mechanical tests, and less and less on careful, painstaking histories, inspection, thorough physical examination, the ability to reason from accepted principles and thus to arrive at a diagnosis. The hospital administrator limitations of standardization, nursing, the convalescent and the physically handicapped are also discussed. The need of constructive cooperative effort is emphasized.

FUTURE OF PRIVATE MEDICAL PRACTICE.

The conditions which have lowered the efficiency and prominence of the private medical practitioner are analyzed by Frank Billings, Chicago (Journal A. M. A., Feb. 5, 1921), and he suggests measures which may restore the practitioner to the position which naturally belongs to him if the program for more efficient medical service to the public shall become successful. Billings says that those physicians who have had the opportunity to take advantage of the knowledge given to the world by the investigations made by laboratory and clinical workers have been able to keep in the front rank of medical knowledge and practice. Lack of opportunity and peculiarities of environment have kept the general practitioner in the background. In general, he has been neglected and left to fight his own battles. Surgeons and physicians who have acquired enviable position and leadership have not had the vision or the unselfishness to plan ways and means for the improvement of the status of the general practitioner. As a result, he has sought the easiest way to attain the main object of his life; that is, the acquisition of sufficient financial remuneration to secure a decent living. Billings states that his experience of years in a consultation and referred practice is that many practitioners neglect even to make a physical examination. Neglect on the part of those who should have acted long ago in the interest of the general practitioner, and his own apathy, have developed a condition in the profession which is harmful to him and detrimental to the public. The proposal of the statutory enactment of compulsory health insurance by many states has been a cause of much discontent, unrest and fear in the medical profession. The resulting uncertainty as to the future of the private practice of medicine has been and is a cause of lessened efficiency of the practitioner which is detrimental to him and to the patients he serves. Primarily, the correction of conditions for the improvement of the status of the general practitioner implies the relation of the medical profession to the lay public. The factors which will improve the conditions of country practice and which

may attract physicians to the country include the fundamental improvement of the environment of the country doctor. Rural life must be made more attractive. But of special importance is the need of facilities for the diagnosis and treatment of the rural population. Medicine and surgery, including all of the specialties, must recognize their interrelations, and in operation must be coordinated as the cells and the organs of the body must be coordinated if a healthy organism is to exist. Disease and its results should be studied, and when the morbid condition is correctly recognized, appropriate treatment may be given. Those who are responsible for the education of the medical student should readjust the curriculum for even greater training in the fundamental branches of medicine, and especially to add greater emphasis to applied science: to readjust the clinical curriculum, with emphasis to be placed on the training in general and special pathology, in physical and functional diagnosis, and to the training in the recognition of disease by actual contact with the patient. The student should be made to understand that the main problem of his present and future is the study of and recognition of morbid anatomy and modified physiology. Turn out graduates who are well grounded in all of the fundamentals pertaining to the general practice of medicine. They cannot become surgeons or specialists until they shall have studied and practiced for a sufficient length of time to qualify themselves. We must secure the cooperation of those qualified to investigate and invent new diagostic instruments and laboratory methods of diagnosis to supplement the published results of their work, so simply phrased that the average practitioner may understand and apply selected simple tests and methods in his diagnostic work. Group practice is considered by most members of the profession as a distinct advance in the methods of medical practice. This is undoubtedly true so far as it pertains to the members of the profession forming the group and that part of the public sick and injured who receive service from the clinic. But if group practice is to succeed in the sense of improvement of medical service in any given community, then the policy pursued must include efficient service and fair dealing with the whole public, both lay and medical. Group practice must deal in a broad-minded, unselfish and sympathetic manner with the physician in the district which it serves. Compulsory health insurance, Billings believes, would be unsatisfactory to the people it is intended to benefit. In the main, it is class legislation, which usually brings injustice to some other class than those it is intended to help. Its alleged advantages to the laboring class does not solve the problem of better and more efficient medical service for the people whom it is intended to benefit. Its application will be more likely to degrade the members of the medical profession who become its servants. There is a tendency on the part of the federal government (U. S. Public Health Service) and of the departments of health of some states to establish clinics for the treatment of certain diseases. There may be rational grounds for this policy in sparsely populated regions of the country which are not provided with a sufficient number of resident physicians to care properly for the sick. With this exception there is no rational basis for this sort of paternalism on the part of the federal or of the state government. The state properly may standardize and enforce certain rules of procedure: notification, methods of disinfection, and the like, for the medical practitioner in the management of patients who suffer from communicable diseases; but the treatment must be left with the physician. Health centers are endorsed by Billings. He discusses the organization of such a center, its management, financial support, and functions. He recommends that as the representative body of the organized profession, the state medical society should formulate standard rules and regulations for the uniform action of the county and district medical societies regarding their relations to the health centers. These relations include the appointment or election by the county or district medical society of the medical board of management of the center, the promotion of post-graduate medical work in the center, the compilation of a uniform rational fee bill, and other objects which require uniformity of action.

INTRAVENOUS USE OF CORPUS LUTEUM EXTRACT IN NAUSEA OF PREGNANCY.

Intravenous injection, John C. Hirst, Philadelphia (Journal A. M. A., March 19, 1921), believes is, the ideal method of administration of corpus luteum extract. The material used is carried directly into the circulation, giving the most rapid absorption possible. It is possible and advisable to use a considerably larger dose (two or three ampules) than is possible with the intramuscular injection, in which more than 1 c.c. causes considerable local reaction. Each ampule contains only 0.2 gm. of the extract, and in this way the necessary total quantity can be introduced more easily and quickly. There is no local reaction or discomfort of any kind after the injection. Intravenous administration often controls the vomiting promptly, in cases in which intramuscular use has failed. The method of administration does not differ materially from the ordinary intravenous injection. The dosage will vary, depending on the type of case under treatment. Ambulatory patients who can come to the office usually receive 2 c.c. every other day. In more severe cases, when office visits would be a hardship, the patients receive 2 c.c. daily, given at home. In pernicious cases 2 c.c. is given twice daily, and the patients are confined to bed. Experience has shown that every patient should receive at least 12 c.c. entirely irrespective of the fact that they respond quickly and favorably to a smaller number. If fewer are used, relapses are common, and are more difficult of control than the original attack. Anaphylactic reactions need not be feared. The presence of a goiter in early pregnancy absolutely contraindicates the administration of corpus luteum extract, either intravenously or intramuscularly, for the control of nausea. In Hirst's experience, every such patient has been made much worse by this treatment.

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ORGANIZED 1841

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SOCIETY PROCEEDINGS

DANE COUNTY.

The regular meeting of the Dane County Medical Society was held Tuesday May 10, in the Y. M. C. A. building, Madison. Dinner was served at 6:30, followed by a lecture by Dr. Otto Foerster of Milwaukee on "Diagnosis and Treatment of the More Common Diseases of the Skin." The lecture proved to be most interesting and instructive and was thoroughly appreciated by all in attendance.

H. M. Carter, M. D., *Secretary.*

FOND DU LAC COUNTY

At the regular monthly meeting of the Fond du Lac County Medical Society held at the Palmer House, Fond du Lac, May 11, twenty-five physicians were in attendance. Dinner was followed by a lecture on "Diagnosis and Treatment of Some of the Diseases of the Heart," by Dr. J. J. Rehorst. A general discussion of this subject followed the lecture.

KENOSHA COUNTY

A joint meeting of the Kenosha County Medical and Dental Societies was held at the Elks' Club, Kenosha, at 8:15 P. M., Friday, April 1. About seventy physicians and dentists were present. Of these, several were visitors from Chicago, Milwaukee, Waukegan and Racine.

Dr. Boyd S. Gardner, head of the section of dental surgery of the Mayo Clinic, Rochester, gave an especially interesting and practical illustrated lecture on "Dental Sepsis and Focal Infection." He discussed a new method of extracting teeth and emphasized the fact that all devitalized teeth sooner or later become infected. Discussion of the subject was led by Dr. Hopkinson of Milwaukee, Drs. Harper and Boswell of Chicago and Dr. Fletcher of Salem. A vote of thanks was extended the speaker and on motion the meeting was adjourned.

A special business meeting of the Kenosha County Medical Society was held at the Elks' Club, April 30th. The president and the secretary were authorized to petition the Board of Directors of the Gilbert Simmons Public Library, Kenosha, to establish a medical reading room and furnish current books and periodicals for the use of the profession.

Resolutions were ordered sent to the State Legislature urging the passage of bills regulating the practice of chiropractic and the defeat of the bill repealing the school vaccination law.

By unanimous vote, Dr. Heinemann of the U. S. Standard Serum Products Company of Woodworth, Wisconsin, and Mr. Henry Miller, pathologist in charge of the Kenosha branch of the State Co-operative laboratory, were invited to become associate members of the society.

For the May meeting of the Kenosha County Medical Society, about ten members of the society accepted the invitation of Dr. Heinemann of the U. S. Standard Serum Products Company to visit the plant at Woodworth. The party motored out about 10 o'clock and spent three very interesting hours at the plant. Injection of tetanus toxin for the production of anti tetanic serum was demonstrated, also the method of bleeding the horses. In the laboratory, the methods of testing and refining the serum as well as the aseptic care in handling it proved very instructive.

H. M. Ripley, M. D., *Secretary.*

MARATHON COUNTY

The regular meeting of the Marathon County Medical Society was held in Wausau, May 5th. A clinic, conducted by Dr. L. M. Warfield of Milwaukee, was held at 3 o'clock at the Mount View Sanatorium, followed by a dinner. At 8 o'clock, lectures were given at the Wausau Club by Dr. J. M. Freeman of Wausau, subject, "Review of Encephalitis Lethargica," and Dr. L. M. Warfield, subject, "Diagnosis of Pulmonary Tuberculosis."

MILWAUKEE COUNTY

A dinner meeting of the Milwaukee County Medical Society was held at the Hotel Pfister, Thursday, May 12, at 6:30 P. M. After the dinner, motion pictures were shown on Social Hygiene, showing the modern diagnosis and treatment of syphilis and gonorrhea. Dr. W. J. Green, a member of the Health Committee of the A. M. A., Chicago, gave the introductory remarks to the film. The picture conveyed to the physicians a clear conception of the entire technique of the diagnosis and treatment of syphilis and gonorrhea and enabled them to visualize many difficult and deft instrumentations heretofore only felt or mentally visualized in the clinic. All the clinic scenes and procedures shown were made in leading hospitals and clinics under the direction of some of the most competent technicians and clinicians in the country.

Daniel Hopkinson, M. D., *Secretary.*

MILWAUKEE MEDICAL SOCIETY

The regular meeting of the Milwaukee Medical Society was held in the auditorium of the Health Service Building, 558 Jefferson Street, Milwaukee, Tuesday evening, May 10. Epidemic Encephalitis was the topic chosen for the meeting and the following papers were read and discussed: "Epidemic Encephalitis from the Clinical Point of View," by Dr. A. J. Patek, Milwaukee; "Experimental and Cultural Studies of Epidemic Encephalitis," by Dr. Wm. Thalhimer, Milwaukee; and "Pathology of Epidemic Encephalitis," by Dr. G. B. Hassin of Chicago. The discussion of the papers was opened by Dr. A. W. Rogers and Dr. Malcolm Rogers, Milwaukee.

The Milwaukee Medical Society held its regular meeting May 24, in the auditorium of the Health Service Building. Several names passed upon by the mem-

bership committee were presented to the society for action. After a presentation of clinical cases, pathological specimens and X-ray plates, the following papers were read: "Speech Disorders in Children," by Dr. Smiley Blanton, Madison; "Congenital Pyloric Stenosis," by Dr. Louis W. Sauer, Evanston, and "Pyuria during Infancy and Childhood," by Dr. H. F. Helmholz, Rochester. Discussion of the papers was led by Dr. Kastner, Boorse, Fellman, Gray and Seeger. A meeting of the Council followed the reading of the papers.

LAWRENCE G. SYKES, M. D., *Secretary.*

OUTAGAMIE COUNTY MEDICAL SOCIETY.

A meeting of the Outagamie County Medical Society was held at the Y. M. C. A., Appleton, May 5, to which the medical profession of the Fox River Valley was invited. Dr. Dean Lewis of Chicago delivered an address on "Tumors of the Breast."

WAUKESHA COUNTY

The monthly meeting of the Waukesha County Medical Society was held Wednesday afternoon, May 4, at Sussex. A general discussion on contagious diseases constituted the program. Dr. C. Perrin of Oconomowoc, president of the society, presided.

Combined Meeting of the Dane County and University of Wisconsin Medical Societies, April 21, 1921.

THE PREVENTION OF CHRONIC NEPHRITIS.

DR. REGINALD FITZ, ROCHESTER, MINN.

Dr. Fitz introduced the subject by a statement of the importance of a determination of the existence of early cases of nephritis. Certain indefinite symptoms of a nervous nature, albumin, casts in small numbers, a few blood cells, may constitute the only early findings. In either of the two types under discussion, which he classified as (1) chronic glomerular nephritis—a condition found in the young and in certain cases obviously due to repeated infections, and too of a more inflammatory nature than the second type (2) arteriosclerotic nephritis of older people. He emphasized that after the development of symptoms in these cases a fatal termination was the early rule. The commonest clinical findings in the glomerular nephritis of the young are edema, the classical nephritic appearance, arterial hypertension, eye ground changes, cardiac hypertrophy, and urinary findings.

He next described the pathologic anatomy of this condition through its large white stage down to chronic contracted form. From the standpoint of renal function he pointed out that there was no absolute relation between the retention of proteid end products, phthalin excretion and the ultimate prognosis. From the standpoint of the patient Dr. Fitz urged the necessity of earlier attention to these cases, pointing out that commonly the admission to a hospital after the development of symptoms marked a stage beyond possible help. Furthermore, he emphasized the fact that all efforts were in the main directed toward the treatment of an end result rather than the developing stage of this form of nephritis.

He directed attention next to the work of Billings of Chicago in relation to focal infections. Dr. Billings reported the first cases of possible relationship between recognized foci of infection and nephritis in 1912. The obvious outgrowth of this information should be a more careful examination of the teeth, tonsils, and other possible sites of infection. From this point Dr. Fitz took up the question of his own experience in the Mayo Clinic separating the more carefully studied nephritics, 62 in number, of the past two years at Rochester into several groups and pointing out the possibilities from the standpoint of removal of focal infections. He admitted the paucity of cases and therefore the impossibility of definite conclusions. However, he indicated the definite line of attack for the future in such cases.

NEWS ITEMS AND PERSONALS

Ripon is planning to build a $25,000 hospital. This will be a municipal hospital under the direction of the Ripon Hospital Association.

Dr. F. T. Clark of Waupun has been elected president of the Wisconsin Homeopathic Medical Society. Dr. J. M. Marsh of Elkhorn was elected vice-president, Dr. John E. Guy, Milwaukee, secretary, and Dr. F. E. Brown, Milwaukee, treasurer. Delegates appointed to the national convention in Washington, D. C., which will be held this month were Drs. F. E. Brown, Milwaukee, M. M. Hopkins, Oconto, and D. S. Runnels, Appleton.

Dr. Joseph Adamkiewicz, an intern at the county hospital, assumed the duties of house physician of the Emergency Hospital, Milwaukee, June first, to fill the place vacated by Dr. Alexander Drill who has entered private practice.

St. Agnes Hospital, Fond du Lac, will celebrate its silver anniversary this month, the corner stone having been laid June 23, 1896.

Theodore F. Wipple, Milwaukee, a masseur, lost his appeal to the municipal court and was ordered to pay the fine of $100 and costs imposed in district court for practicing medicine without a license.

Dr. E. A. Riley, formerly of Park Falls, who has been in the west for two years has returned to Wisconsin and is again located at Park Falls.

Miss Ella McGovern, former superintendent of nurses at River Pines Sanatorium, Stevens Point, sailed for Serbia in May in company with five other trained nurses, where they will be engaged in child welfare work under the direction of the American Red Cross.

St. Joseph's Hospital, Marinette, recently started construction of an addition to the nurses' training

school. The addition will afford the hospital accommodations for twenty-six students.

Dr. and Mrs. G. V. Mears arrived home in Fond du Lac, May 9, via auto from Jacksonville, Florida, where they have spent the winter.

Charges with respect to mismanagement and other gossip regarding the State School for Dependent Children at Sparta have been proven to be without foundation. In the report of the Institutional Investigating Committee, they state as follows: "The committee exonerates Dr. Prince, superintendent of the State Public School at Sparta, and all other officials, of charges aired in executive committee meetings and in so doing justifies its policy."

The anti-smallpox vaccination campaign was ended when the Senate killed the Peltier bill repealing compulsory vaccination of school children, May 5.

A room in the Kenosha library has been turned over to the Kenosha County Medical Society, in which about four hundred medical books owned by the society will be placed as a nucleus for a larger medical library. The library board voted to devote a portion of the money used in buying new books each year to the adding of the latest books on medicine and surgery to that branch of the library.

Dr. Henry H. Kleinpell has opened offices in the Colby-Abbot Building, Milwaukee, his practice being limited to diseases of infants and children.

DEATHS

Dr. George F. Mason, 395 Park Place, Milwaukee, died at his home May 13, after an illness of five years. Dr. Mason was born at Lancaster, Ohio, November 5, 1867, and graduated from the Milwaukee Medical College in 1901. For many years, he was a member of the Masonic order. He was a member of the Milwaukee County, Wisconsin State and American Medical Associations.

BOOK REVIEWS

The Technique of Psycho-Analysis. By Smith Ely Jelliffe. Second edition, revised and enlarged. Nervous and Mental Disease Publishing Company, Washington, D. C., 1920. Paper. 170 pp.

Dr. Jelliffe's work on psycho-analysis is planned for the beginner rather than for the trained analyst. No one in America is better prepared or qualified to present such a work and Dr. Jelliffe has succeeded in giving to the profession a volume splendidly adapted for its purpose. It is a work which would interest and should be purchased not only by those engaged in neurology or psychiatry but in these times when the public has taken such a keen interest in the subject, it could profitably be read by every general practitioner.

Principles of Hygiene: *A practical Manual for Students, Physicians and Health-Officers.* By D. H. Bergey, M. D., Dr. P. H., Assistant Professor of Hygiene and Bacteriology, University of Pa., 7th edition, thoroughly revised. Octavo of 556 pages. Illustrated. W. B. Saunders Co., Philadelphia and London. 1921. Cloth, $5.50 net.

The fact that Dr. Bergey's work has reached a seventh edition attests the splendid reception it has received at the hands of the medical profession. It is prepared to meet the needs of the students of medicine in acquiring knowledge of modern hygienic practices, to assist the architect in knowing sanitary building requirements and for those engaged in public health work. The entire subject of hygiene is covered in a comprehensive but not an exhaustive manner.

In the seventh edition, advantage has been taken of the lessons taught by the great war and many parts have been rewritten. The entire subject matter has been brought up-to-date. The work is as highly recommended as have been the previous editions.

A Primer for Diabetic Patients: *A Brief Outline of the Principles of Diabetic Treatment, Sample Menus, Recipes and Food Tables.* By Russell M. Wilder, M. D., May A. Foley, and Daisy Ellithorpe, Dietetians, the Mayo Clinic. 12mo. of 76 pages. W. B. Saunders Co., Philadelphia & London. 1921. Cloth, $1.50 net.

Dr. Wilder has succeeded in producing an ideal little primer to be placed in the hands of the diabetic patient. The book is based on the belief that the education of the patient is essential to successful treatment. It is a work which should be available in every physician's office either to loan or give the diabetic patient.

The Principles of Therapeutics. By Oliver T. Osborne, M. D., Professor of Therapeutics, Department of Medicine, Yale University. Octavo of 881 pages. W. B. Saunders Co., Philadelphia and London. 1921. Cloth, $7.00 net.

Dr. Osborne states in his preface: "This book has been written with one viewpoint constantly in mind, namely, to present the data necessary for the advanced student to well understand the objects of scientific treatment, the rational use of active drugs and the physical methods used in the treatment of disease."

In this he has succeeded and has even presented undergraduate subjects tersely and concisely. The general practitioner will find the book of value as a review of up-to-date practical therapy. The book is divided into fifteen sections, among them are: "Prescription Writing," "The Valuable Drugs," "Action, Uses and Administration of Drugs," "The Endocrine Glands and Organo-Therapy," "Practical Therapeutic Measures," "Practical Advice to Young Physicians," "General Physical Measures," "Emergencies," "Poisonings," etc., etc.

There is no better work on the subject and no physician's library is complete without a work of this exact character.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

The Technique of Psycho-Analysis. By Smith Ely Jelliffe. 2nd Edition, revised and enlarged. Washington, D. C.: Nervous and Mental Disease Publishiug Co. 170 pp. Paper. 1920.

Dermatology. By Walter James Highman, Chairman Section on Dermatology and Syphilology, A. M. A., Associate Professor of Dermatology, N. Y. Postgraduate Medical School and Hospital. First edition, 482 pp. 95 illustrations. New York: The MacMillan Co. 1921.

Surgery of the Upper Abdomen. By John B. Deaver, M. D., Sc. D., LL.D., Professor of Surgery, University of Pennsylvania, and Astley P. C. Ashhurst, A. B., M. D., Associate in Surgery in the University of Pennsylvania. 2nd edition. 9 colored plates and 198 other illustrations. Philadelphia: P. Blakiston's Son & Co. Price, $14.00 net.

Keen's Surgery. Vol. VIII. By Surgical Experts. Edited by W. W. Keen, M. D., LL. D., Hon. F. R. C. S., England and Edinburgh, Emeritus Prof. of the Principles of Surgery and Clinical Surgery, Jefferson Medical College, Philadelphia. Octavo of 960 pages, with 657 illustrations, 12 of them in colors. Philadelphia and London: W. B. Saunders Co. 1921. Price, Vol. VII and VIII and Desk Index Volume, Cloth, $25.00.

Principles of Hygiene: A Practical Manual for Students, Physicians, and Health Officers. By D. H. Bergey, M. D., Dr. P. H., Assistant Professor of Hygiene and Bacteriology, University of Pennsylvania. Seventh Edition, thoroughly revised. Octavo of 556 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1921. Cloth, $5.50 net.

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A Primer for Diabetic Patients. A Brief Outline of the Principles of Diabetic Treatment, Sample Menus, Recipes and Food Tables. By Russell M. Wilder, M. D., May A. Foley, and Daisy Ellithorpe, Dietetians, The Mayo Clinic. 12mo of 76 pages. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $1.50 net.

Traumatic Surgery. By John J. Moorehead, B. S., M. D., F. A. C. S. Philadelphia and London: W. B. Saunders Co. 1920.

Mental Self-Help. By Edwin Ash, M. D. 119 pp. New York: The MacMillan Co. 1920.

The Adolescent Girl. A Study from the Psycho-Analytic Viewpoint. By Phyllis Blanchard, Ph. D., with a preface hy Dr. G. Stanley Hall. New York: Moffat, Yard & Co. 242 pp. 1920.

The Psychology of Functional Neuroses. By H. L. Hollingworth, M. D., Associate Professor of Psychology, Columhia University. D. Appleton & Co., New York. 256 pp. 1920. Price, $2.00.

Psychology and Psychotherapy. By Wm. Brown. M. A., M. D., University of London. New York: Longmans, Green & Co. 196 pp. 1921.

Tuberculosis of Children. By Prof. Dr. Hans Much, University of Hamburg, Germany. Translated by Max Rothschild. New York: The MacMillan Co. 156 pp. 1921.

Dream Psychology. By Prof. Sigmund Freud, M. D. Translated by M. D. Eder. New York: The James McCann Co. 283 pp. 1920.

Rational Treatment of Pulmonary Tuberculosis. By Charles Sahourin, M. D., Medical Director of the Durtol Sanatorium, France. Authorized translation. 6th edition. 440 pp. Philadelphia: F. A. Davis & Co. 1921. Price, $3.50.

Eye, Ear, Nose and Throat Nursing. By A. Edward Davis, A. M., M. D., and Beman Douglass. 2nd edition, revised. 32 illustrations. 345 pp. Philadelphia: F. A. Davis & Co. 1920. Price, $2.50.

Practical Psychiatry and Psychology. By C. B. Burr, M. D. 5th edition. Revised and enlarged. Illustrated. 269 pp. Philadelphia: F. A. Davis & Co. 1921. Price, $2.00.

Mother and Child. By Edw. P. Davis, A. M., M. D., Professor of Obstetrics, Jefferson Medical College. 4th edition. 278 pp. Philadelphia: J. B. Lippincott & Co. 1921. Price, $2.75.

Epidemic Respiratory Disease. By Drs. E. L. Opie, F. G. Blake, James C. Small and T. M. Rivers. Illustrated. 402 pp. St. Louis: C. V. Moshy Co. 1921. Price, $6.50.

Diagnostic and Therapeutic Technic. A Manual of Practical Procedures Employed in Diagnosis and Treatment. By Alhert S. Morrow, M. D., Attending Surgeon to the City Hospital and to St. Bartholomew's Hospital, New York City. 3d edition, entirely reset. Octavo of 894 pages. 892 illustrations, mostly original. Philadelphia and London: W. B. Saunders Co. 1921. Cloth, $8.00 net.

Transactions of the College of Physicians of Philadelphia. 3d edition. Vol. 41. Containing the papers read hefore the College from January, 1919, to Decemher, 1919, inc. Puhlished in part by the income from the Francis Houston Wyeth fund.

Keen's Surgery. Edited hy W. W. Keen, M. D., LL. D., Emeritus Professor of the Principles of Surgery and Clinical Surgery, Jefferson Medical College, Philadelphia. Octavo of 855 pp. 359 illustrations, 17 in color. Philadelphia and London: W. B. Saunders Co. 1921.

Regional Anaesthesia. (Victor Pauchet's Technique.) By B. Sherwood Dunn, M. D., Officer D'Academie, Surgeon Service de Santé Militaire de Paris. 224 figures in the text. Philadelphia: F. A. Davis & Co. 1921. Price, $4.00.

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BOOK REVIEWS

Keen's Surgery Volume VIII. By Surgical Experts. Edited by W. W. Keen, M. D., LL. D., Hon. F. R. C. S., Eng. and Edin., Emeritus Professor of the Principles of Surgery and Clinical Surgery. Jefferson Medical College, Philadelphia. Octavo of 960 pages with 657 illustrations, 12 of them in colors. W. B. Saunders Company, Philadelphia and London. 1921. Price Volumes VII and VIII and Desk Index Volume, Cloth, $25.00 net per set. Sold by subscription.

Volume VII of this Surgery was reviewed in a recent issue of the Wisconsin Medical Journal. Volume VIII as well as the complete index to the entire eight volumes has just reached our desk and a careful examination of its contents shows that the same complimentary remarks can be said of it as of the preceding volume. Many of the contents in this volume are supplementary to the other volumes and bring the literature and the facts up to date. It includes 42 Chapters covering almost the entire field of general surgery.

Of especial interest will be found the Chapters on the Thyroid Gland, the Adrenal Glands, the Hypophysis, Surgery of the Head, Surgery of the Trigeminal Nerve, Tumors of the Gasserian Ganglion, Surgery of the Abdomen and Pelvis, Surgery of the Gall Bladder and Bile Ducts, Surgery of the Urinary Tract, Radium in the Treatment of Malignant and other diseases, the Chapters dealing with the various types of anaesthesia, the Chapter dealing with Gas Poisoning in the War, and the Chapter dealing with the American Red Cross in War and in Peace.

This volume as well as the other ones are indeed an excellent compliment to the work of Dr. W. W. Keen and a great contribution of our American Surgeons and our English confreres.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1920.. Cloth. Price, postpaid, $1.00. Pp. 72. Chicago: American Medical Association, 1921.

While New and Nonofficial Remedies consists in part of descriptions of those proprietary medicines which the Council deemed worthy of consideration by the medical profession, the Annual Reports of the Council on Pharmacy and Chemistry describe the preparations which the Council finds unworthy of recognition. In addition, these annual reports contain other announcements of the Council.

The present volume contains a number of interesting reports. Thus we find a statement which makes it clear that many of the large pharmaceutical houses are definitely opposed to the work of the Council and will remain antagonistic until a very large proportion of the medical profession will give the Council their active support. The volume also contains a report on some digitalis preparations which the Council examined and declared to be pharmacopial digitalis products and therefore do not require the control of the Council.

Of the reports on proprietary medicines found unacceptable for New and Nonofficial Remedies there are reports on the following which, because of the publicity given the products by their exploiters, will be of special interest to physicians: Platt's Chlorides, Syrup Leptinol (formerly Syrup Balsamea), Sukro-Serum, Spirocide, Libradol, Supsalvs.

Of considerable interest are reports on a number of products which were admitted to New and Nonofficial Remedies on the basis of evidence which at the time seemed to indicate the products to have therapeutic merit, but which did not stand the test of time and which therefore have been omitted from the 1921 edition of New and Nonofficial Remedies. These reports give evidence that great care is taken to keep New and Nonofficial Remedies up to date.

Those who are not familiar with the methods of the Council in the examination of new medicaments or who may even have been inclined to look upon the acceptance or rejection of a medicament by the Council as a somewhat perfunctory procedure, should read the report of "Chloryptus"—a chlorinated eucalyptus oil. Its proprietor believed it to be a most efficient wound antiseptic. He presented to the Council many lengthy reports of laboratory tests and of clinical trial. The Council found the evidence inconclusive and refused recognition to the product. The discoverer of Chloryptus apparently has accepted the conclusion of the Council—at all events it is not being pushed—and thus many a physician is spared the temptation of experimenting with a new drug which in the end will but add to his long list of medicaments which have been tried and found wanting.

(Continued on pages 23 and 45.)

DIAGNOSIS OF CHRONIC VALVULAR DISEASE.

Paul D. White, Boston (Journal A. M. A., April 30, 1921) summarizes the symptoms and signs of disease of each of the four heart valves: mitral, tricuspid, aortic and pulmonary; taking up first the pathognomonic signs, if there are any, and then those that indicate, but do not prove, the presence of a definite valvular lesion. White believes that pathognomonic of an individual valve lesion. It is only when heart failure begins or when a cardiac infection is in progress that special symptoms begin to develop.

ETIOLOGY OF CARDIOVASCULAR AFFECTIONS.

In a series of 478 cardiovascular cases, Joseph H. Baruch, Pittsburgh (Journal A. M. A., April 30, 1921), endeavored to investigate the antecedent disease history. It appears that the heart patient whose clinical picture was that of a previous endocarditic gave a history of having had one or more of the following diseases; rheumatic fever, tonsillitis and scarlet fever. The patient in whom a diagnosis of myocardial involvement was made gave a history of having had quite another group of diseases. In order of frequency they were: tonsillitis, typhoid fever, diphtheria, pneumonia and rheumatism.

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ORIGINAL ARTICLES

X-RAY EXAMINATION OF THE CHEST AND AN X-RAY CLASSIFICATION OF PULMONARY TUBERCULOSIS.*

BY KENNON DUNHAM, M. D.,

CINCINNATI, OHIO.

From the Cincinnati Tuberculosis Sanatorium.

The object of this paper is to bring to the profession a practical method of X-ray examination of the chest, based upon 10,000 such examinations, each checked by careful physical examination and history or autopsy, and to present the X-ray classification of tuberculosis used at the Cincinnati Tuberculosis Sanatorium.

The primary purpose of the examination is to locate and describe abnormal densities and thus detect tuberculosis, identify its type, and to differentiate it from other chest lesions. In this way I am able to classify tuberculosis, arrive at a more perfect diagnosis, secure a workable basis for prognosis and am enabled, with certainty, to outline the necessary treatment from the very beginning of my care of the case. This is made possible because stereoscopic chest plates are of prime importance in determining pulmonary pathology.

The limits of an X-ray chest examination must be frankly stated. X-ray studies of lungs and chests by many workers during the last twenty years have proven, that a physical examination, even in expert hands has great limitations. The limitations of each method have been proclaimed by men who were not fully familiar with the method they criticised, so that today the profession has only a hazy knowledge of what we may expect from each.

The greatest value of any single sign of a physical examination of the chest is the detection, location, and classification of rales. This is so important that our late army experience has developed the erroneous theory that clinical tuberculosis should only be diagnosed by rales. The truth of the matter is that you may have rales upon inspiration, over a limited area, without tuberculosis, and you may have active tuberculosis without rales.

In a case of incipient tuberculosis the rale is of great importance for the same reason that the X-ray fan is important, viz., that the common adult pulmonary lesion is cone shaped and its base comes to the pleura. Thus, when you have the adult type of tuberculosis you have inflammation with exudate at the point of inoculation, which partially fills the air cells and distal portion of the bronchial tree; the extent of the lesion is limited by the septa of the lung, which extends into the lung from the pleura in such a manner as to form a cone with its base at the pleura. The stethoscope easily detects such lesions because of their superficial location, and we hear a shower of fine rales breaking immediately under the ear. They are usually heard at the beginning of inspiration and because they are generally not so acute as other forms of pneumonia the patient must often exhale and cough before they are brought out. It must be realized that this is not a pathognomonic sign of active pulmonary tuberculosis, but is a sign of localized inflammatory exudate from which tuberculosis must be excluded. Early tuberculous adult lesions are most commonly found in the apex of a lobe, sometimes in the apex of a lower lobe. So the location of such findings must be carefully considered when making a diagnosis.

It is not generally realized that rales due to tuberculous lesions frequently disappear after a few weeks or months and that rales due to localized apical pneumonia such as we had during the late epidemic frequently persist for months. Further, it is not generally known that we have at times central spherical areas of tuberculosis which give no such rales. Most important to remember is that we may have very extensive lesions of tuberculous caseous bronchopneumonia without physical signs. The purpose of these few remarks upon physical signs is not to discuss the physical signs

*Address in Medicine, 74th Annual Meeting State Medical Society of Wisconsin, La Crosse, Sept. 9, 1920.

of tuberculosis, but to show some of the values and limitations of the X-ray.

While rales due to pulmonary tuberculosis may come and go, this is not true of the abnormal densities in the lungs due to tuberculous lesions. They may change but they never go. Thus we have a record of the past, and although the rales have disappeared an old area of tuberculosis is easily detected by the X-ray. A fan due to a recent tuberculous invasion, in which the rales may be very characteristic and due to recent localized tuberculous exudate, is difficult to detect upon the X-ray plate. Thus the usual error in reading X-ray plates of tuberculous cases is to overlook recent active lesions, or to diagnosis non-tuberculous lesions of similar density tuberculosis. The usual error of the clinician is to overlook old lesions and thus underestimate the extent of the pathology. Such densities must be differentiated from artefact, and from localized exudate due to other causes. Artefacts are corrected by proper roentgen technique.

I wish to call attention to the limits of a roentgen examination of the chest due to error of technique. Breathing during exposures or between stereoscopic exposures may obscure delicate pneumonic fans or may cause them to appear when they do not exist. If plates are repeatedly taken in the same position, it is easy to determine the normal position of the trunks and thus localize the lobes of the lungs. Many positions can be used, but for each position the normal anatomy must be worked out. I have carefully worked out the anatomy for one position and if the lobes of the lung are to be determined by my method, that position must be maintained. I have witnessed some grave mistakes made in localizing a lesion, by failing to observe the positions of plate, tube and patient described in one method yet trying to read these plates by that method. I have seen the same lack of correlation by having Dunham's fans pointed out to me in pictures of perfectly healthy men who have breathed between stereoscopic exposures and in three second exposures.

Hard tubes with rapid exposures do not obscure the delicate fans, but a tube with a five inch spark gap or less exposed for three or four seconds will cut out very delicate fans.

Errors of interpretation are the most difficult to overcome. Nothing can overcome this, but a knowledge of the normal lung anatomy and the normal lung densities will greatly reduce the errors. (Miller[1] and Dunham[2].)

At this point I wish to state that a delicate fan limited to one apex of an adult should be noted and described, but should not be diagnosed pulmonary tuberculosis, because it is probably due to other etiological factors. Let us look at the reason. The lesion, if in the lung, is due to exudate. It might be a pleural lesion mistaken for a fan. If due to tuberculosis it is our first exudative lesion, and it is very unusual to find a first exudate. Such patients are not sick and seldom consult a physician, while patients with localized pneumonia due to acute infections are usually sick or have troublesome symptoms. Thus you can differentiate between tuberculous and apical rales which persist after la grippe and influenza. If possible, it is important to determine whether such densities are actually within the lung or in the pleura. If such a lesion is active it can easily be determined by the stethoscope. Therefore, the clinician's attention should be called to the density and its character described. Such lesions when due to tuberculosis are easily arrested and the patient should not be branded as tuberculous. Such densities often exist for life after an attack of pneumonia or empyema, or a healed tuberculous lesion and it is often impossible to decide the clinical significance of such a density from the plates alone. Age should always be considered: they are of less significance after thirty. Thus we have definite limitations of the X-ray which should be acknowledged and left to the decision of the clinician.

When both apices are involved we have a better chance because if due to tuberculosis the pulmonary lesions are of different ages and one density will differ from the other. Thus it is usually easy to say definitely whether one or more of these lesions are within the lung tissue. But still we are dealing with slight lesions and must be guarded. The clinician should give greater weight to such findings but we must be guarded in our reports and frankly acknowledge another limitation. Activity in such a case is very difficult to determine from the plates.

The most excusable error is when we find one or more old tuberculous fans and a recent active fan below this. Such a lesion should always be diagnosed recently active tuberculosis; yet I have had two such cases which were due to influenza engrafted upon an old tuberculous lesion. Such

an error is on the safe side because unless this patient is treated as tuberculous there is every likelihood that the old lesion will be reactivated by the acute process. This is another limitation.

Pneumonokoniosis, active bronchopneumonia and malignancy will be considered later.

In an article entitled "X-ray Chest Manual" I covered the technique and reading of X-ray plates. Since this was written I have developed a Coolidge tube technique which I wish to report and I wish further to add a statement as to the value of the fluoroscope. The fluoroscope can in no way compare with the stereoscopic chest plates in detecting slight lesions, such as minimal tuberculous lesions, nor in studying the various pathology of gross tuberculous lesions. Its value lies in studying motion. Thus the movement of the diaphragm, the pulsation of the heart and the aorta, posterior mediastinal space, and the passing of the barium bolus through the oesophagus can be best studied by the fluoroscope. A universal Coolidge tube 39 inches from the plate, excited by 40 M. A. to 60 M. A., with a 7 to 9 inch back up under full load, exposed for one-half second will take a good chest picture of a 150 pound man, upon Seed plates. It is necessary to develop these longer than the usual exposure, sometimes as much as 15 minutes. To do this it is necessary that the chemicals be clean and the temperature 65.8. (Fig. 1.)

If plates are taken at 39 inches they can be used with proper modifications to determine the size of the heart. Such technique will bring out the lung markings so clearly that the bronchus of the lung tree can be studied readily from good stereoscopic plates.

Before reading and interpreting lung plates it is necessary to understand the normal plate, or rather, the average plate of normal individuals at various ages. Almost every scar and calcified area within the lung leaves a mark upon the plate and as all adults have such areas they must be recognized for their true value. Thus the marks of tuberculosis are almost universally observed in adults who have grown up in congested communities. They have been infected with tuberculosis but they do not suffer from tuberculosis. "They have the infection but not the disease." It is obvious that a diagnostic procedure which detects and does not differentiate such infection and disease has little value. Lesions due to infection which have healed are probably our best protection against pulmonary tuberculosis. Calcification at the roots of the lung of an adult chest, in which no fans can be demonstrated in the periphery should be considered as resistance and not disease. This truth was suggested early in my investigations, when the first fifty sets of stereoscopic chest plates of healthy adults showed much greater calcification within the hilum and much more thickening and studding of the trunks than did fifty cases suffering with active pulmonary tuberculosis with which they were compared.

Therefore, it was evident from the very first that the roentgen examination to be of value must differentiate between infections which had healed and which were a protection and those which were active, had clinical significance or limited lung function and were a danger to the patient. Here I wish to make the general statement that when we have definite fans of increased density within the lung we are dealing with a lesion which causes loss of lung function, whether we have an active process due to tuberculosis or pneumonia of other etiological factors or an inactive lesion such as pneumonokoniosis.

It is the characteristic densities of a fan which are pathognomonic of tuberculosis and not the fan itself. The fan is characteristic of a pulmonary lesion and results from the anatomy of and physiology within the lung, but the characteristic tuberculous density results from the pathology of tuberculosis and the tubercle is far from being the only pathology. The tubercle alone, even the conglomerate tubercle or individual areas of caseous bronchopneumonia as seen upon the plate are not characteristic of tuberculosis.

If we exclude acute pneumonic infections of the lung, pulmonary tuberculosis is the most common lesion we find. Its clinical and pathological manifestations are so varied that tuberculosis must be eliminated before any other diagnosis can be substantiated.

Therefore, if, in reading chest plates, we start with a knowledge of the chest plates in healthy individuals and a knowledge of the chest plates of the various forms of tuberculosis we have gone far in mastering this difficult subject. No roentgenologist would expect to read bone plates without careful study of the anatomy of the part studied. This preliminary necessity is even more true in the interpretation of chest plates. The physiology of the lung, especially the lymph flow

as well as the pathogenosis of tuberculosis must be understood. Where pulmonary tuberculous lesions start—how they spread and how the lesions in the child differ from those in the adult and how each is recorded upon the roentgen plate will be dealt with under classification. Here I wish to impress the fundamental truth that without these preliminary necessities it is hopeless to interpret chest plates and to deduce from them the all important prognosis.

Pulmonary tuberculosis is not always present when tubercle bacilli are reported in the sputum. For fully ten years I have realized the truth of this statement, but have not had sufficient proofs to allow it to appear in print under my name. To-day I fearlessly state the truth. The proofs are beyond question, but I hasten to add that such cases are rare and such a diagnosis can only be made after great care. I have had eight cases in this series of our ten thousand; two proved to be acid fast bacilli other than tubercle bacilli, and six were due to old nodes rupturing into a bronchus, from which large numbers of bacilli were expelled for a few days and then were found no more. No evidence of lung involvement was ever found.

I cannot say that these eight cases are the only ones which have occurred, but they are the only ones which I have proven.

Many more cases of lung stones have occurred, some have been without tubercle bacilli in the sputum and some have had definite pulmonary lesions. These six had no pulmonary lesions by physical examination, by X-ray examination, nor by subsequent history. It is stated over and over again that the presence of tubercle bacilli in the sputum is the one infallible sign of pulmonary tuberculosis and it is this broad statement which I wish to challenge by stating that it is not infallible, but that it is the one which is most nearly infallible. Most errors arise by improper technique, in preparing and interpreting slides, some from other acid fast organisms, and an important group are those nodal infections in which the pulmonary lesions have healed but which later rupture into a bronchus. If the small cavity quickly drains the lesion is soon healed to the great surprise and chagrin of the physician. It is possible to conceive that the patient may be reinfected by such a discharge or that a calcified stone which for some reason of size or position, has not been expelled may keep up cough by irritation. Of these six cases reinfection did not take place, and an irritating cough did not follow, and five of them did expectorate lung stones. I would not have had these histories of lung stones unless I had impressed upon the patients the necessity of watching for them.

These cases were found by making routine stereoscopic chest examinations and especially studying all cases with a clinical diagnosis of tuberculosis which did not show positive evidence of pulmonary tuberculosis upon the plates.

In the same manner many cases of bronchiectasis are found as well as a few abnormal densities in the lungs which promptly clear up with anti-syphilitic treatment.

Generally an X-ray diagnosis of pulmonary tuberculosis should be limited to parenchymal tuberculosis in the adult. It is unwise to read peribronchial tuberculosis and hilum tuberculosis from an X-ray plate. The reason for this is simple. As stated above, we can seldom determine whether such densities result from healed lesions (infection) or active lesions (disease). They may be roughly considered active in a child and healed in an adult. They can never be considered tuberculous without calcification. Heavy trunks and hilum shadows result from many pulmonary infections, and as all adults have suffered from pulmonary infections by the tubercle bacillus or some other organism it is manifest that all adults will show peribronchial thickening and heavy hilum densities. I know of no way to separate these groups by the X-ray plate, and I have lungs which have been X-rayed to determine this point. (Fig. 12.) It is true that heavy trunks in the upper lobes are often associated with tuberculosis, but it is also true that if stereoscopic plates are carefully taken and carefully read that small fans will be found involving the linear markings beyond these trunks.

Pathologically peribronchial and hilum tuberculosis exist but we have no way of deciding when they have clinical significance or when the densities are caused by infection other than tuberculosis.

I have not found the use of such distinctions necessary to check plate readings with clinical and pathological studies and conclude that when unaccompanied with fans peribronchial thickening in the adult has little clinical significance, and

should not be described in the report. Its greatest use as I have seen it has been to furnish a loophole for the roentgenologist. Thickened trunks and heavy hilum densities may be valuable in reading the plates of children, but only as a study, not as a final diagnosis.

Heavy trunks and heavy hilum shadows containing definite caseous or calcareous areas in children's plates, according to my present knowledge, may be considered tuberculous, but I am unwilling to go farther unless they show definite fans, and can be classed as adult tuberculosis.

There is a peculiar calcified area seen in the hilum which has clinical significance. This I have termed caseo-calcareous node. Upon the plate it has the density of calcium. It is usually quite large and can be seen to be made up of many small flakes of calcium rather than one stone. Upon section we find a soft caseous center containing microscopic calcium and large hard flakes of calcium around the periphery. Such lesions I have never found to be healed and they should always be considered as a potential focii of infection.

AN X-RAY CLASSIFICATION OF PULMONARY TUBERCULOSIS.

The lung with its pathology is regarded as a whole to adapt the classification especially to X-ray work.

1. *Adult Tuberculosis:*

Syn: Secondary tuberculosis.
Nodose tuberculosis.
Apical tuberculosis.
Chronic fibroid tuberculosis.
Tuberculosis in the sensitized patient.

(A) Apical fibroid tuberculosis; earliest findings localized tuberculous pneumonia; if lesion extends
  (a) Chronic fibroid tuberculosis develops.
(B) Gelatinous and caseous bronchopneumonia (with apical lesions).
(C) Lobar caseous pneumonia (with apical lesions).
(D) Fibrous pleurisy—pleural exudate.

2. *Puerile or Primitive Tuberculosis:*

Syn: Childhood tuberculosis.
Tuberculosis in the non-sensitized patient.

(A) Primary lesion and tuberculous nodes.
(B) Miliary tuberculosis.
(C) Basal tuberculosis.
(D) Tuberculous caseous broncho- and lobar-pneumonia (without apical lesions).
(E) Caseous pleurisy.

There have been so many classifications of tuberculosis that today there can be only two excuses for attempting a new one. Either that the writer may frankly express the limitations of his knowledge, which means his ignorance, or that by such a sacrifice he may help someone struggling with the problem of the disease. I have hesitated many years before presenting this classification. It has been of help to me and my associates and I finally formally present it to this Society. Its value lies in the description of the peculiar densities which are associated with each type seen upon the plate; the separation of the disease into the puerile and adult type which has been so clearly presented by Opie[3], also the emphasis that these types are dependent upon the resistances of the economy which differ greatly in the child and the adult. These are partially and indefinitely suggested by differences of lymphatic system, hypersensitiveness and immunity.

At the very beginning of my work it was found that there was a great difference between the plates of tuberculous children and tuberculous adults. It was a great satisfaction when in 1917 Opie proved that this difference was due to anatomical differences. This confirmed my unpublished work which showed that difference in the plates was due to differing lesions and not to imperfect X-ray technique.

It has been shown by Krause[4] that tubercle grows very differently in sensitized and non-sensitized animals and Col. Bushnell[5] has brought a mass of evidence to prove that this holds good in man. He has also shown that non-sensitized adults of the aboriginal races suffer like children and I have often seen children whose resistance was so great that they had definite fibroid fans containing well walled off cavities.

It is therefore, evident that age is only a partial factor, and that immunity or hyper-sensitiveness plays a part. The only method known of raising immunity is by inoculating an animal with the living tubercle bacillus. This has been done repeatedly by Webb, Krause and others in animals and in congested communities, all children receive

it without expense—too often an overdose is administered. Thus before a child is ten he is usually sensitized, and has acquired a degree of immunity and we may expect the characteristic adult fan lesions.

It is true that we have the adult lesions in children and that we have puerile lesions in the adult. Either of these transformation types argues a grave prognosis. Adult lesions in the child unless very slight argue a far advanced disease and the puerile type in the adult argues little resistance unless it is healed.

The differentiating roentgen characteristic of such lesions is the tuberculous fan. These are found constantly in the adult type, and I wish here to again describe them because they have been so frequently misunderstood. Allow me to repeat. The fan is not necessarily a characteristic of tuberculosis. It is a characteristic of a limited lung lesion. It is dependent upon the septa of the lung which are arranged so as to divide the lung into numerous cones or triangular pyramids. These limit the extent of many lung lesions as effectively as the lobe limits lobar pneumonia. They form the secondary lobules of the lung. When a lesion with differentiating density develops within one or a number of secondary lobules it may be recognized upon the plate. Such lesions are found in lobular pneumonia, pneumonokoniosis, infarct and tuberculosis. The pathognomonic tuberculous lesion is found when we have two or more of these fans of differing density. (Fig. 10.) These densities may vary from a coarse interweaving to a faint cloud, to fine or coarse studding or to a complete blotting out of the lung structure. In advanced lesions the novice is unable to make out the fan, but they can usually be seen if the plates are carefully studied. Usually tuberculous fans form first in the upper part of the upper lobes.

I believe that I can amplify this truth if I digress and explain why tuberculous fans are of differing densities, how and why they differ from some other lesions and emphasize that primarily they are small and lie close to the periphery.

The early adult lesion is small because tuberculosis spreads very little by contiguity but by the lymph stream and later through the bronchus. The septa are prolongations of the pleura into the lung and they prevent the spread of the lesion beyond their boundaries because they carry the lymph flow away from the adjacent lobules, and barring cavitation the tubercle does not pass over this boundary. The lesion may invade the adjoining lobule but it does not pass through the septa. In a sensitized animal such as a man there is great exudation at the point of infection which floods this small compartment of the lung, but this does not spread beyond the boundary unless it goes down one bronchus and up another and floods another lobule. Thus, the early fans are usually small and their size is dependent upon the amount of exudate. I do not know why these fans should be so near the pleura, but they are found both upon the plate and upon section. Certainly the lymphatics must play a great part in this. Possibly these infections near the center and roots of the lungs have better lymph drainage. The densities of these fans differ because they are of differing ages and the various pathological lesions, such as fibrosis, caseation, calcification and exudation appear in the recent lesions. The former will be presented by various degrees of clouds and studdings; the latter by a very delicate cloud. Thus localized apical pneumonia as seen after influenza may simulate the latter, but could not the former.

Malignant tumors, especially secondary sarcomata, spread through the lymphatics exactly as does tuberculosis, but they have no especial affinity for the apices and they are not restricted by the septa. They spread very rapidly by continuity; thus secondary sarcomata often appear as spheres of increased density. We may have a case of carcinoma which produces a mottling very much like caseous bronchopneumonia, but there are no apical fans. If such a plate was caused by tuberculosis, then it would be classified under the puerile type and we would look for a man who had been raised and had lived the greater part of his life in a sparsely settled country. The caseous pleurisies which are found in army hospitals often simulate malignancy.

Thus, the slow growth of tubercle, the restraining influence of the septa, the exudate around infections in sensitized animals, the lymph drainage, the location of the lesion, produce characteristic densities which can be accurately diagnosed in fully 95 per cent of all cases of adult tuberculosis if doubtful cases are excluded.

Thus I have presented the early and characteristic X-ray lesion of the most common form of tuberculosis—the fan—and I have tried to explain why the fan. But the fan does not embrace all the

lesions of tuberculosis even as seen upon the X-ray plate as found in adult tuberculosis and the apical fan is never found in puerile tuberculosis.

Let us now consider briefly the remaining types of adult tuberculosis and study their densities and distribution within the lung.

Here I wish to state that chronic fibroid tuberculosis is the result of many tubercles, many tuberculous exudates and many fibroid protective reactions.

Before going further let me quote from the lecture of Dr. Bunting: "There are just three lesions in the tuberculous lung: Tubercle, exudate and fibroid protective reaction." The tubercle can have three densities: early tubercle, caseation, calcification. Exudate can have three densities: serous exudate, cellular (caseous) exudate, calcification where encapsulated. When caseation breaks down we have a cavity with decreased density. The fibroid protective reaction gives a density in proportion to the fibroid tissue produced modified by its age. The degree of density of the various tuberculous lesions progresses in the following order: cavity; serous exudate; early tubercle; fibrous tissue; cascation; calcification.

After the apical lesion the most common lesion of adult tuberculosis is caseous bronchopneumonia. Its X-ray density is a course flocculant mottling. It is associated with old apical lesions, usually containing cavities. It invades the lower and middle lobes and the lower part of the upper lobes and sometimes the apex opposite to an old lesion. It frequently can be seen scattered along a branch of the main stem bronchus suggesting raisins upon a stem. It may become confluent and produce pseudo lobar caseous pneumonia. Then it takes on a fan shape. It is probably caused by aspirating droplets of sputum containing large numbers of virulent tubercle bacilli into primary lobules.

The size of these densities vary greatly even in the same individual but to a greater extent in different individuals. Sometimes they are so small as to suggest miliary lesions and again they appear as a filbert.

When the X-ray picture is hazy and the lung appears as seen through a snow storm, we are dealing with an acute active lesion or hemorrhage. Thus, when we see the picture of finely mottled caseous bronchopneumonia as through a snow storm we may suspect that we have gelatinous tuberculous bronchopneumonia or caseous bronchopneumonia complicated with an acute pneumonia. Caseous-tuberculous-bronchopneumonia may exist over a large area without causing any signs or symptoms, but always suggests a grave prognosis. The more acute and the more extensive the lesion the more grave the prognosis. Caseous bronchopneumonia must be differentiated from acute bronchopneumonia. The latter lesions are usually much less dense and they are not associated with large apical lesions. Also the cases of caseous pleurisy found in the puerile classification have similar lung densities without apical lesions. Malignancy also must at times be differentiated but here again we do not have apical lesions. Always we have the clinical picture, the history and physical signs to help solve these knotty problems and the roentgenologist has only to definitely describe and locate the abnormal densities with or without large apical tuberculous lesions to give the clinician his all important clue.

Lobar caseous pneumonia occurs in both adult and puerile types, but old apical lesions are associated with the adult type. It is fan shaped and may involve a lung or part of a lung. Its size and degree of density depend upon the number of secondary lobules involved. The character of the density is homogeneous and may be found in any part of the lung. Such lesions break down and cavitate rapidly. It is the predominant lesion in "hasty consumption" which precedes cavitation. Large areas of the lung may be so involved for months without causing severe symptoms. The principle sign if flatness. The prognosis is desperate for this lesion will surely break down and rapidly cavitate. It is called hasty consumption because, although the lesion may have existed for some time, it is often only recognized shortly before death. The X-ray densities of early cases must be differentiated from unresolved pneumonia and pneumonokoniosis, and the history is our best aid. Later the diagnosis from the X-ray plates or sputum present no difficulties, but the clinician must ever be on his guard. Acute tuberculous pneumonia with fever simulating frank pneumonia gives a similar X-ray picture with less density and the roentgenologist may be as easily fooled as the clinician if we are dealing with a puerile type without apical lesions; but if we have a definite apical lesion the roentgen examination suggests the diagnosis.

Fibrous pleurisy and pleural effusion are fre-

quently associated with pulmonary tuberculosis. They will not be discussed in this paper except to say that a small amount of caseation is frequently found in fibroid pleurisy of the adult type and to call attention to the very different lesions which will be described under the puerile type.

I have now reached the puerile type in this classification and repeat that it is not found with apical fans, and that its classification is based upon a study of the entire lung field.

The early puerile lesion as seen upon an X-ray plate shows a heavy trunk and large hilum shadows with possibly a small cap at or near the distal end of the trunk. Such foci are usually seen within the mid lung zone. Sometimes enlarged pulmonary or bronchial nodes are seen. Unfortunately such a picture may be obtained following many diseases, and I know of no roentgen markings which are sufficiently characteristic to justify a diagnosis of tuberculosis from these X-ray densities. Opie and Gohn[6] have carefully described these lesions. When healed and calcification has developed they are easily recognized but that is usually long after their clinical significance has passed. Thus, so far as I know, primary and nodal lesions in a child cannot be recognized from the plate unless they contain calcification.

Acute miliary tuberculosis deserves especial consideration. I have classified it with the puerile types without fans, but realize that it does occur at the end of the disease as well and then usually with fans. I believe that it is the result of lack of immunity or the loss of immunity. Thus we find it associated with old healed lesions in which I believe the immunity has been lost and without such lesions I presume that we have never had much if any immunity. I have specimens of miliary tuberculosis without old lesions from cases over twenty years of age, but class them in the puerile type.

The X-ray picture is that of fine studdings more or less evenly distributed throughout all lobes. Such a picture is very characteristic, but not pathognomonic, for such plates cannot be differentiated from pneumonokoniosis, and we must again consider age, clinical picture, and history. Only at the end of the disease will the physical signs help. Many cases of healed miliary tuberculosis are being found by our more general use of the X-ray. This diagnosis is only justified when the subject is well, has had no exposures to pneumonokoniosis and the calcifications can be definitely determined within some of the tubercles as seen upon the plate. The prognosis of miliary tuberculosis is very grave but cases do recover. Basal tuberculous lesions are rare. They do exist and as they are most common in children and have no apical fans, I have classed them with the puerile types. They are pneumonic in character and sometimes have the bronchopneumonic distribution around their edge, but I have never seen the raisin on a stem distribution. They are very difficult to diagnose and I always wait for the bacillus to be found before making a definite diagnosis. This is a definite limitation and reduces the percentage of correct diagnosis, but is safe. It is much better for the roentgenologist to locate and describe the lesion and leave the diagnosis to the clinician. Basal lesions must be differentiated from lung abscess and unresolved pneumonia. The clinical symptom will usually differentiate it from lung gangrene. The prognosis is grave, but cases recover.

The puerile types of caseous lobar and lobular tuberculous pneumonia only differ from the adult type by the absence of apical lesions. The prognosis is very grave or desperate in either type and length of life depends most upon the extent of the lesion.

Caseous pleurisy like miliary tuberculosis may occur in individuals over twenty. I believe that it results from lack of immunity. The X-ray picture is that of empyema associated with caseous bronchopneumonia without apical fans. There are various degrees of caseation within the pleura associated with fibroid pleurisy. In the adult type caseation is rare. In the puerile type caseation predominates. I have seen solid cheesy masses at the apex and base which measured 5 c. m. in thickness. The extent to which the parietal pleura is involved is most extraordinary. The end is invariably fatal and rapid, but the patient neither feels nor looks sick. Usually if the chest is tapped a little fluid is removed, but when aspirated a second time little is found.

The greatest helps I receive from this classification are prognosis and the differentiation of tuberculosis from other diseases—thus, intelligent treatment. X-ray classifications have been given by Cole[7], Brown[8], Waters[9] and Heise[10]. They each have value, but they do not help me with prognosis nor pathological differentiation. They all deal

with the extent of the lesions. This is most important after we have definitely determined the pathological character of the lesions. An old well walled off fibroid lesion will always be a handicap but such patients often live long to die of other disease, whereas a small pneumonic fan of active tuberculosis which is only seen upon the plates with difficulty usually causes an early death unless brought to immediate arrest by the utmost care.

Again, one entire upper lobe may be so contracted by scar tissue as to lie above the second rib in front and the third dorsal spine behind and although a whole upper lobe is destroyed it would be classed as only moderately advanced. I know that this classification is neither perfect nor complete, but even in its present form it has been of great help and has enabled us to clear up many difficult problems.

THE DIFFERENTIAL DIAGNOSIS OF A FEW DISEASES WHICH DUE TO THEIR COMMON OCCURRENCE MUST RECEIVE ESPECIAL CONSIDERATION.

The first of these is syphilis of the lung. That such lesions are not uncommon is the belief of every clinician. Every large X-ray clinic can show cases with massive increased densities which have cleared up under antisyphilitic treatment. It has always been my belief that tuberculosis was often complicated by syphilis and that both roentgenologically and pathologically the tuberculous lesions obscured the syphilitic infection. In my judgment this subject can never be closed until someone has demonstrated the presence or absence of the spirochete in the tissue. But however that may be we have dense lung lesions partially simulating tuberculosis upon the plates which clear up wonderfully with salvarsan. Therefore, when we have an undiagnosed density within the chest syphilis should be thought of. To find these densities routine X-ray examinations are necessary.

I have previously called attention to the frequency with which heart lesions, especially mitral stenosis, may simulate pulmonary tuberculosis and wish to state that no examination of the lung is complete without a heart examination and stereoscopic X-ray plates.

Pneumonokoniosis is deservedly receiving more and more attention all the time. There are two main forms of this—organic dust, and inorganic dust. The former frequently suggests miliary tuberculosis and later in the disease produces massive fans of great density, while the inorganic dust produces large fans simulating pneumonia. Often the history and clinical condition of such patients must be ascertained before making a diagnosis.

Pulmonary infarct may very closely resemble tuberculosis especially the basal lesions and must always be considered.

Finally, this review of over 10,000 chest examinations shows the need for more general use of the X-ray in studying the lungs. In tuberculosis clinics this examination should be routine and if it were more used in our general hospitals it would not be long before many problems such as syphilis of the lung would be more fully understood. The greatest value of the routine X-ray examination, lies in its ability to yield definite data in the absence of definite physical signs.

Dr. John Skavlem has been associated with me in a large part of this research and I am especially indebted to him for covering the bibliography.

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PROHIBITION AND THE PHYSICIAN.

Our profession has been injured in the eyes of the public because a few of its members have not had the moral stamina to live up to the trust placed in physicians by the government agency responsible for the enforcement of the Volstead act. This we presume might have been expected: our profession is composed of human beings with all human frailties. From the very first many thoughtful physicians regretted that the government should have found it necessary to shift some of its responsibility to the medical profession; it was feared that there would be some who would be willing to sacrifice professional honor for financial gain. Unfortunately, developments have justified the fear. And now a recent ruling of the Secretary of the Treasury permitting physicians to prescribe large quantities of beer and wine will tend to aggravate the condition. A little more and the complacent physician will become a substitute for the bartender. A majority of the reputable physicians have from the first refused to take out the permit to prescribe liquor. These have no trouble in disposing of such friends or intimate patients as may wish to abuse the friendship of their medical advisers.—*Jour. A. M. A.*, April 30, 1921.

THE INFLUENCE OF CERTAIN CARDIO-VASCULAR CONDITIONS UPON SURGICAL RISK.

BY ARTHUR T. HOLBROOK, M. D.,
MILWAUKEE.

Perhaps the most significant tendency in the art of present-day medicine is the association of the practitioners of its various departments in what is termed group medicine.

This tendency is simply a recognition of the interdependence of these different branches and finds its expression in the readiness with which consultation is sought; in the organized office group; in the harmoniously co-operating members of a properly constituted hospital staff; and finally in the development of a modern clinic such as the one at Rochester or at Cleveland. There has been some misunderstanding of the objects of this association of physicians.

At the opening of the Cleveland Clinic in February, Dr. William Mayo emphasized as an important point that, properly considered, group medicine is not an arrangement for any direct financial benefit to patient or practitioner, but a scientific co-operation for the welfare of the sick. In this co-operation, no relationship is closer or more essential than that between the surgeon and the internist; and in this relationship, there is no more important subject for conference than the bearing which the physical condition of the patient has upon his surgical risk, both as regards his immediate operation and the result upon his future health.

This paper is an attempt briefly and practically to consider certain cardio-vascular conditions which are commonly encountered by the surgeon, and to aid in the standardization of a method of procedure in each case, from the standpoint of surgical risk.

The points selected for consideration are:

The Relation of Cardio-Vascular Disease to

I. Anesthesia and Surgical Operation.
II. To Pregnancy.
III. To Uterine Fibromyomata.
IV. To Bacteremia.

I. The Relation to Anesthesia and Operation.

Modern medicine taking advantage of this close

*Read before the Milwaukee Surgical Society, May 2, 1921.

association of the various specialists, and of the disclosures of the sphygmomanometer and the electrocardiograph, does not lightly excuse unexpected cardiac collapse on the operating table, nor does it lightly accept the rather convenient and questionable but withal venerable explanation of "acute cardiac dilatation."

Probably no single factor has done more to develop our present conception of heart conditions in relation to operation, than the electrocardiograph. With its use and through carefully observed clinical experiences and autopsies, the conclusion is definite that instead of valvular defects being the chief danger element in this relation, it is the condition of the myocardium that is of the greatest importance. Groups of physiologists are active in interpreting electrocardiographic findings in clinical terms. The important bearing of the origin and condition of the heart beat on muscle conditions in the heart is the first article in the new Physiological Review. Diagnostitians and internists connected with the large surgical clinics are busy in the study of cases of heart failure which their wealth of material presents.

Levine in nine cases carefully observed with the electrocardiograph found three paroxysms of auricular tachycardia, four of suddenly developing auricular fibrillation, two of paroxysmal auricular flutter. Willius of the Mayo Clinic reports numerous instances of auricular fibrillation and flutter, partial and complete heart blocks and other conditions which we know to be due to the inco-ordinated contraction of various muscle bundles in walls of the heart. These involve the questions of disordered and inadequate stimulus production and conduction which the physiologists are working out on lower animals.

Technical as these findings are, they are of great importance in a general way because of the definiteness with which they lead our interest from the traditional stethoscopic examination, to the muscle condition as the real element of importance in a heart that is about to be subjected to the unusual experience of anesthesia and operation.

We have respect for tradition, medical and otherwise, and dislike the thought of another generation relegating to the junk heap, our present pet theories and practices. One danger of developing new hypotheses in medicine is the unreasonable readiness with which the old ideas are abandoned. In the enthusiasm of study of myocardial changes, it is important for us not to neglect consideration of the endocardium. It is as true today as it was years ago, when some careful scientific, observing clinician first propounded the proposition, that aortic valve lesions are generally the most dangerous to the surgical risk; and that mitral stenosis is very dangerous; and that uncomplicated mitral regurgitation cases stand anesthesia and operation well. Numerous other established facts regarding damaged heart valves are of vital importance in determining the surgical risk. The one point we are to keep in mind is, that, regardless of other heart findings, it is in the condition of the musculature of the heart that we will find an answer to the question as to whether or not that particular heart will withstand the stress of operation or resist the pernicious effect of anesthesia toxemia.

Dynamically, the heart failure or collapse consists in the inability of the left ventricle to empty itself. Clinically, degeneration of the myocardium and lesions of the aortic valves are the most serious for the surgical risk; and corroborating our hypothesis, these conditions form the greatest handicap for proper ventricular emptying. Likewise, a high arterial tension because of sclerosed, unyielding vessels, constitutes a serious addition to the demands on the ventricle and aids in preventing its emptying.

Conversely, we know that the vast majority of compensated valvular heart lesions offer but little danger from anesthesia and bear operation well. This is primarily because the musculature of the heart is competent, and furthermore there is commonly associated an incompetency of the mitral valve which lessens the actual strain upon the muscle of the ventricle in emptying itself, because the regurgitation automatically acts as a safety device. Of course, in the decompensated heart, or one with a very narrow margin of safety, this regurgitation constitutes a serious danger, but this class of cases fortunately is comparatively small and for the most part frankly expose their weakness as a warning to anesthetist and surgeon.

The cardiac collapse of these cases during operation is due to

(1) The actual exhaustion and failure of the heart muscle.

(2) The toxic action of the anesthesia.

(3) The combination of the two elements.

The recognition of the danger class is plainly a

matter of careful physical examination before operation.

Once under suspicion, the management of the surgical patient with a damaged heart should begin at least several days before operation, provided the case is not an urgent one. He should be put to bed, kept on his usual diet and medication, and as far as can be foreseen, kept in about the position he will occupy after the operation.

An absolute measure of the functioning power of heart muscle has not as yet been devised. Sir James MacKenzie in discussing this subject before the Massachusetts Medical Society, two years ago, stated that he has been studying for thirty-five years to find some definite method of determining the ability of heart muscle to withstand operation and obstetric delivery, but that he had found none beyond the general impression gained from many elements—from the history, the appearance and surface considerations, the blood-pressure, the pulse, the physical signs, the symptoms—in short, what we have recently heard Dr. Hugh Cabot call a "medical hunch."

Pre-operative observation is particularly important where the physical examination has disclosed signs of pulmonary congestion with rales at the base of the lung. Definite heart murmurs indicating the lesion or combination of lesions that may be the causative factor of such a pulmonary condition, are usually very difficult to diagnosticate and are rarely identified. They are usually associated with other and more readily recognized heart lesions and the diagnosis rests upon the lung examination. These cases, unless cleared of symptoms, are dangerous as surgical risks, especially in the pulmonary after-effect of anesthesia.

The time limitation of this paper precludes the adequate consideration of many important related conditions, such as the heart condition in toxic goitre. In this particular disease, pre-operative management is absolutely necessary until the tachycardia and blood pressure ratios are within the safety margin. The great advantage of local anesthesia in many of these cases is obvious.

Inasmuch as one of the most important indications of condition during operation is the blood pressure, this should be recorded at least once daily during the pre-operative period.

Having in mind the possibility of acidosis and the importance of as much reserve as possible in the heart muscle, the diet before protracted operations should consist of reduced fats and increased carbohydrates. The old custom of very active pre-operative catharsis is vicious in weakened heart cases. However we view the radical methods of Crile and his followers in the management of the patient immediately preceding anesthesia, we must all agree to the reduction, as far as may be possible, of all physical and mental strain. Pre-anesthetic morphine may be indicated but it must be kept in mind that its use may mask the anesthesia state and when during the operation the analgesia of morphine wears off, matters may be at a stage where a serious embarrassment or delay may be caused. I have noticed this in cases of throat work where for instance a tonsillectomy is interrupted by uneven anesthesia and a very decided element of danger added if the patient is a questionable surgical risk. It has also been my observation, strengthened by interviewing timid patients who have been through anesthesia, that an absolute stillness in the room with the uninformed patient picturing to himself an expectant group of surgeons, nurses, and attendants standing about the table with eyes on him and his actions, is far more disturbing during the induction of anesthesia than quiet, normal, tactful conversation and activity among the operating room staff.

Attention also must be given to the position on the table of the heart case before anesthesia is started. A patient who for weeks has been accustomed to a more or less upright position and perhaps two or more pillows in bed, is suddenly placed perfectly flat on his back and given practically no head support. He naturally thinks this is an important part of the procedure, has made up his mind bravely to do his part without comment, and in some heart conditions, he may be started, in this thoughtless way, on a period of heart embarrassment which may prejudice the whole operation.

When during the operation it becomes necessary to change the patient's position, this must be accomplished gradually. The Trendelenburg position is to be avoided if possible. If it is essential, a very careful and slow change must be made. The Fowler position during and after operation is likewise objectionable as it increases the demands upon the heart.

Selection of Anesthetic.

From the impaired heart standpoint, local anesthesia is the ideal if it can be successfully used

and if the patient is not too apprehensive. Neither ether nor nitrous oxide can drive up a blood pressure as certainly as pain and fear.

Paravertebral anesthesia would be satisfactory if the use of much scopolamin could be avoided.

Spinal anesthesia is reported as particularly dangerous in cases of broken compensation and in cases with a narrow margin of safety. It is oftentimes the procedure of choice in arterio sclerotic patients, who stand it well. In heart cases, great caution should be used not to embarrass the respiratory muscles, which makes the umbilical line the safety limit. Richardson advises against spinal anesthesia in a patient who could not temporarily stand a fifty per cent drop in his blood pressure.

In the selection of a general anesthetic, we come upon an old-time problem. In its solution the most important aid contributed in recent years is the determination of the different phases of blood pressure.

The significance of blood-pressure readings is chiefly in the pulse pressure. Cases of hypertension without demonstrable heart complications are not bad risks for operation under proper anesthesia; but cases with a high pulse pressure and a low diastolic, are precarious. Angina pectoris is especially dangerous. Diastolic pressure is of the utmost importance and should be given even more consideration than the systolic. When endocardial lesions are excluded but the heart evidently impaired, the pulse pressure is the best single indication we have of the muscular strength of the heart. Polak has stated that the pulse pressure should bear to the systolic pressure a ratio of about 1 to 3, and is extremely guarded in his prognosis when it drops to 1 to 2. For example, a pulse pressure of 40 and a systolic of 120 would be normal and safe, but let the ratio change, for instance, by a drop of 20 in the diastolic pressure with the systolic still at 120, we should have a pulse pressure of 60 or the dangerous ratio of 1 to 2.

Moore and McKessom have attempted through the blood pressure and pulse rate to classify surgical risks during operation. Their conclusions are:

(1) *Safe.* 10 to 15 per cent increase in pulse rate without change in pressure.
10 to 15 per cent decrease in pulse rate without change in pressure.

(2) *Dangerous.* 15 to 25 per cent increase in pulse rate with 15 to 25 per cent decrease in pressure.

(3) *Fatal.* Progressively increasing pulse rate above 100 with progressively falling pressure; 78 or less systolic; 20 or less pulse pressure; condition maintaining for more than 20 minutes.

It might be well to call to mind that a combination of high blood pressure and any delay in coagulation time should put the surgeon on extra guard against hemorrhage.

With this data before us, let us take up in turn the more common general anesthetics.

(1) *Gas Oxygen,* regarded by many as the safest of all.

This anesthetic causes a rise in blood pressure to a certain degree. This rise may be reduced to a minimum by slow, careful induction and may become extreme in rebreathing or under cyanosis. It is far from safe in broken compensation, in angina pectoris, and in cases of marked hypertension. These dangers are increased in a protracted operation or one in which much muscular relaxation is demanded.

In compensated heart cases of fair margin of safety, gas oxygen is a satisfactory anesthetic, particularly in short cases and where little muscular relaxation is demanded. The lessening of nausea and vomiting after gas anesthesia is of distinct advantage in heart cases. Under this anesthetic changes occur rapidly and with little or no warning.

(2) *Ether,* raises the blood pressure but to a less extent than gas oxygen.

Carefully given, the whole pressure soon falls slightly but continues at a higher level than normal. The diastolic pressure drops back nearly to normal. It is a cardiac stimulant whose chief danger in heart cases is the long period of post-operative depression with its frequently attendant nausea and vomiting. It is oftentimes of great value in the stage of maintenance of anesthesia after induction with gas oxygen.

It is undoubtedly the anesthetic of election of most American surgeons and anesthetists for the usual run of operations and for the questionable heart and hypertension cases, particularly where deep anesthesia and a long operation are required. Statistics apparently warrant this popularity of

ether, particularly where the use of the new anesthetics and mixtures would mean long and probably rather costly experimentations. The newer, so called, Cotton Ether, is in this class as yet for most operating rooms.

(3) *Chloroform,* is the most pleasant anesthetic to inhale, acts quickest, and with least respiratory irritation and has but little disagreeable after-effect.

Unlike gas oxygen and ether it lowers the blood pressure.

In England and undoubtedly in other localities it has been the popular anesthetic and has been used with a freedom that American surgeons would view with apprehension.

Abundant proof, we Americans believe, is available that chloroform has a distinctly toxic action on the heart muscle, which tends to weaken that organ. Undoubtedly occasional cases of idiosyncracy to ether are found, but they are rare compared to the cases which have succumbed to chloroform. The highest percentage of chloroform fatalities in patients with heart lesions occurs during induction as a sudden stop of heart action without warning. The period of maintenance of the anesthetic is comparatively free from fatalities, while the effects in from three to five days after operation are often disastrous. They consist of toxic action on various organs such as the heart muscle, adrenals, liver, etc. Chloroform, if used at all in cases of cardio-vascular impairment, should be reserved for those cases where ether or gas oxygen are not available.

Anesthesia mixtures, such as the A. C. E., offer no special advantage and in heart cases have no place.

The emergency care of patients suffering heart failure during operation, consists in cessation of anesthesia and operation at the earliest possible moment.

Recalling the need of co-ordination and proper stimulus to the muscle fibers of the heart, some method of vagal stimulation is indicated. Levine reports successfully employing pressure over the carotid arteries and ocular pressure. Molyneux has in two cases of laparotomy with desperate symptoms of heart failure, restored the heart from its alarming, inco-ordinated tachycardia to a satisfactory action by actual heart massage through the diaphragm.

Rest should be secured as nearly as can be in the position that is usual to the patient; external heat; morphine if restless. If hypodermocylsis and rectal injections are given, it must be with consideration of blood pressure conditions and the amount of blood lost. Strychnine and digitalis are of no value.

The post-operative care of the cardio-vascular cases that have come through their ordeal successfully must be conducted with due consideration for the particular lesion involved. The more conservative of the measures just outlined will be valuable if the patient is very weak.

Fluids should be given freely and food as early and of as high caloric value as can be borne. 2 to 3 per cent glucose solution may be given by rectum. The urine should be watched for acetone, and soda given in small, frequently repeated doses, if there is any suggestion of acidosis. Heart stimulants are useless. What the patient requires is rest rather than stimulation and if a drug is needed, it will undoubtedly be morphine.

II. The Relation to Pregnancy.

This subject, while closely related to the problems we have just been considering, presents many distinctive phases. Pregnancy concerns young women, for the most part under 40 years of age. Abdominal surgery, which is the most nearly comparable surgical consideration, concerns for the most part individuals from 35 to 40 years and over. Serious cardiac lesions are different in individuals before 40 than after. Systolic murmurs that are as a rule not very significant before 40, after that time usually have added very serious myocardial changes.

Pregnancy is a time of physiologic stress—there must be strong effort on the part of the heart, but if the stress is met by sufficient reserve power, if that elusive element "the margin of safety" is broad enough, there will not be enough undue strain upon the heart to make the pregnancy and delivery dangerous. The problem then of the damaged heart in obstetrics is the determination as accurately as may be of the relation between the amount of stress which pregnancy and labor will entail and the reserve power of the heart that is to meet this extra work. Evidently it is a matter

for individual consideration because of the complex elements involved. There is an agreement among students of this subject that about 10 per cent of all pregnant women have heart murmurs. There is also agreement that of this number fully four-fifths of the cases present unimportant conditions which are more or less functional, and for the most part do not exist before pregnancy nor persist after it. It is the 2 per cent representing the difference between the unimportant and the important with whom we are concerned, and the significance of their proper care is not only in the consideration of the serious dangers during a present pregnancy and labor; but to safeguard the future well-being of the patient.

The nature of the lesion must be as accurately determined as possible. One does not go far in his experience to learn that in obstetric cases mitral stenosis is distinctly the most dangerous single valve lesion, while hearts showing an uncomplicated mitral regurgitation go through the ordeal very satisfactorily. Diseased aortic valves are serious and combined lesions, particularly if mitral stenosis is present, are more serious than lesions of a single valve. Important as these facts are, the final test of the heart's competency will be in the condition and in the functioning possibilities of the heart muscle; the determination of which reminds us of Dr. Cabot's dictum. Certain important factors, however, aid us. The amount of compensation; the blood pressure; the fact that younger women respond better than those at the end of the child bearing period; the history of the lesion; the degree of the lesion. In this last respect, Sir James MacKenzie points out that in that most dangerous lesion, of mitral obstruction, the early condition of cicatrization following the original ulceration about the valve, does not present nearly as great danger as the later condition of stenosis which requires one, two, or more years for its development. He finds prognostic value in the peculiar manifestations of the murmur. Preceding the development of the distinct and diagnostic pre-systolic murmur, there is a thrill at the apex before the apex beat. Later comes a short pre-systolic murmur which gradually increases as the lesion ages to a much longer sound and has associated with it, the diastolic murmur. From this he concludes: short pre-systolic murmur, small degree of stenosis, better risk; long pre-systolic murmur, particularly if associated with diastolic, a bad risk.

Recognizing these factors, the obstetrician has three questions to answer for his patient.

(1) Shall a patient with organic heart lesion be advised that it is reasonably safe for her to bear one or more children, or shall pregnancy be interdicted?

(2) When such a patient becomes pregnant with or without advice, under what circumstances may she continue the pregnancy, or when should it be terminated?

(3) What method of abortion or of delivery is advisable?

(1) There is no question that the majority of women with heart lesions can marry and bear children, but not without some resulting damage to the heart. Repeated pregnancies probably always cause a proportionate increase in damage and danger of decompensation. It is unfair to this class of patients to forbid child bearing as long as the risks involved and the price which is to be paid are carefully explained to both husband and wife and accepted by them. Any patient who has had attacks of decompensation, whether during previous pregnancies or under ordinary conditions, should be advised against the risk of pregnancy under all circumstances. All cases with mitral stenosis or aortic valve lesions should be advised against pregnancy.

(2) The physician unfortunately is usually consulted after the conception has become a fact. In these cases pregnancy should be terminated promptly if there is a history of previous decompensations, or if there are marked signs of mitral stenosis of aortic valvular disease.

In cases considered permissible for a continuing of pregnancy close supervision with the association of an internist, should be followed. Regulation should be insisted upon in diet and bowel action; urine closely watched; unnecessary mounting of stairs and active exercise forbidden; daily rest periods observed; possibly one day a week in bed advised; rising blood pressure should cause concern. The slightest symptom of decompensation should be met by rest in bed and the possible use of digitalis. The patient should be examined frequently.

If after a fair trial, compensation fails, the pregnancy must be terminated. The operative procedure selected will depend upon such factors

as the possibility of restoring compensation, the availability of hospital care, the dangers of moving the patient, the individual training of preference of the obstetrician.

(3) Newell of Boston declares that if the restoration of compensation warrants, the operation of election is abdominal hysterectomy, or Cesarian section and sterilization under ether, although para-vertebral or even local anesthesias may be used with comparative safety if preferred. If compensation cannot be restored, he advises immediate abortion under spinal or para-vertebral anesthesia. General anesthesias are badly borne by these patients.

If restoration of compensation warrants, Newell postpones his operation, keeping the patient in bed until two weeks before estimated end of pregnancy, then delivering the primipara by Cesarian section and sterilization; and the multipara if the soft parts are sufficiently relaxed, by a prompt forceps application at the end of the first stage of induced-labor.

In cases of mitral stenosis or a marked aortic lesion, he believes Cesarian section the safest procedure, two weeks before term, even though there has been no previous decompensation and the operation indications are not very urgent.

If the case is one that has recovered from a previous decompensation, he believes the Cesarian operation to be obligatory.

Under different circumstances, however, it will be left for the obstetrician to decide whether or not less risk is entailed by more conservative measures of inducing labor, with the forceps to facilitate the emptying of the uterus at the first possible moment.

III. The Relation to Uterine Fibromyomata.

It is clear to the experienced physician or surgeon that the association of heart lesions and myomata of the uterus is frequent enough to suggest that it is probably not merely accidental. A review of the statistics of various operators and clinics shows the percentage of cases of fibromyomata uteri showing heart disease to be generally in the neighborhood of 40 to 50 per cent.

Strassman and Lehman, 40.8 per cent.

Göttingen Clinic, 40.9 per cent.

Wilson, 46 per cent.

Winter, 60 per cent heart abnormality, 30 per cent showing distinct murmurs.

Boldt's autopsies showed some degenerative change in the heart muscle of every case whether diagnosticated during life or not.

Hall, 40 per cent.

McClellan notes the frequently repeated observation that the cardio-vascular condition is usually modified and often entirely relieved following operation for the removal of the tumor; and furthermore the startling fact that in practically all cases terminating unfavorably the bad result was directly due to no other cause than the cardio-vascular complication.

The surgical importance of the association of these two conditions is certainly evident. It is rather remarkable that the real cause of the heart condition in these cases, or the actual fact of an etiologic relation between these two conditions, has never been definitely settled despite the large number of investigators who have done a very considerable amount of work on the problem.

I have a collection of about twenty theories in the matter which range from anemia to heightened pressure by tumor obstruction; and from disturbed metabolism to toxemia due to absorption from degenerating muscle fiber; and a complete denial of any but a casual relationship. It is a question, to quote the words of Boldt, "which will receive scientific solution only when competent diagnosticians in internal medicine are associated to make careful examinations of all patients having myofibroma and further to have these same diagnosticians examine the patients from time to time subsequent to operation and in case of death, call in pathologists not only to determine macroscopic findings but to have careful microscopic examinations made of heart, blood vessels and kidneys."

Despite this lack of definite knowledge of etiology, and of agreement about the relationship, certain facts are established in these conditions which make clear certain surgical indications.

In the first place there is a degenerative process evident in the musculature of the heart in a large percentage of these cases. This condition may or may not be recognized by auscultation. The condition has a decided tendency to progress unfavorably without operation, and a tendency toward improvement following operation. The hemorrhages common to these conditions conduce to anemia and its consequent weakening effect on the heart muscle. Certain abnormalities in metabolism are undoubtedly due to ovarian irritation and hyper-

functioning, which probably also accounts for symptoms conveniently put in the diagnostic carry-all of "reflex nervous disturbance." Pressure on ureters, bladder, intestines, blood vessels, nerves—on any adjacent structure may cause significant symptoms. Every observation, every tendency of these associated conditions speaks for the early removal of the tumor or tumors. Surgeons are in the habit of urging patients with uterine fibromyomata to have an early operation because the tumor is liable to change into a more threatening condition. While this is true, it is my belief that with a forty or fifty and probably higher per cent of chance that the heart is or will be affected, and that once affected, it will progress badly, we have another argument for early operation, which is fully as important.

As to selection of anesthesia and conduct of operation, the suggestions set down in the first section of this paper are pertinent. One additional consideration is presented and that is the success which has attended the more conservative procedure of radium application. While most surgeons would prefer the exact and more satisfactory cutting operation, we have all seen myomatous cardiac cases whose surgical risk is so bad that the use of radium would be hailed as an ideal means of handling the case.

IV. Relation of Bacteremia.

Under this subdivision, I wish to give a resumé of four cases taken from our recent records. The details, which are omitted to save time and space, are carefully recorded and accessible to anyone interested.

The cases are of a school boy of 15, man of 37, woman of 28, man of 47. All four cases developed bacteremia following minor operations. The boy of 15 had a cutting operation with use of spoon and bone forceps in what was a probable attempt to reach the antrum of Highmore; the other three had teeth extracted followed in each instance by curettement of the alveolar processes. The boy of 15 and man of 37 had each suffered previous attacks of rheumatism followed by endocarditis and had for years distinct murmurs of valvular heart lesions. Of the four cases, these two with the heart lesions died, the other two recovered.

These cases present many facts of surgical importance not the least of which is the blood infection following minor lacerating operations; but the point of interest under the subject of this paper is that the cases of damaged hearts were the only fatal ones. This is to my mind more than coincidental, and is corroborative of the observation that the heart valves, particularly when damaged, are a very favorable tissue for bacterial growth. This, of course, is particularly true of streptococci, especially of the hemolyticus or viridans strains, and inasmuch as these germs are commonly found about teeth, tonsils, nasal membranes, sinuses and other structures which are frequently subjected to surgical treatment, it is especially important for the physician who refers cases and for the dentist or other specialist who operates, to keep these facts clearly in mind.

Cases of old endocarditis have for the most part demonstrated that they have harbored foci of infection, that their individual resistance has been too low to withstand the serious invasions of germs from these foci or their developed toxins. Hence, it behooves the operator to be very careful about the further introduction of bacteria into the blood stream of such a patient; and should suggest to him that when a case is presented which has a history of so-called rheumatism with a damaged heart, operation should be done only under the most favorable conditions that can be obtained and should be as clean cut and brief as possible with a scrupulous avoidance of all unnecessary laceration and mutilation. Personally, I believe the dental practice of curettement following teeth extraction has been a most pernicious source of bacteremias.

It has been demonstrated clinically that in cases of bacterial invasion of the blood stream there is a fairly favorable prognosis where the feeding source of contamination can be discovered and removed; and conversely the outlook is absolutely bad when this source cannot be removed. In cases of bacterial invasion of the heart valves, and particularly such as occurs so consistently in valves with old vegetations, we have to deal with a secondary focus of infection which may become as prolific as the primary and which always darkens the prognosis because it must be left to continue as a feeding source even if the primary source is removed.

In explanation of the particular susceptibility of this valvular vegetation tissue as a medium for bacterial growth, the facts recited are consistent with the hypothesis that in order effectively to exercise its bacteriacidal power, the blood has to be dis-

tributed to capillary vessels and that the blood stream as it flows through larger vessels, has little such power. The valves of the heart being directly in the blood stream and whipping it with the folds and the chordae tendinae have an excellent chance of separating the bacteria from the stream and giving them lodgment.

Once thus planted on this soil they have but little to contend with from the blood in the meagerly supplied capillaries or from the blood which washes past in the stream. They soon develop a most active source of bacterial contamination in the most accessible distributing point of the body.

In closing this paper, I do not feel that the conclusions from its somewhat heterogeneous considerations would be emphasized by the orthodox summary. My thesis is that the attending physician and the surgeon should be mindful of these few points where the conditions of the heart and vessels touch vitally upon the proper care of critical cases. An important truth loses nothing by its frequent, even bromidic reiteration and I am led to end as I began, by urging the interdependence of surgery and internal medicine.

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WHEN TO OPERATE MASTOID IN CHILDREN.*

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APPLETON.

In the formulation of the qualified answer as to the time for opening the mastoid in suppurative mastoiditis in children, a short review of the general post aural structure may be of service as the variation in development, size, and location of the various structures going to make up the sum mastoid total, is so persistent that normal standards can never be considered and we frequently find ourselves in a quandary because of such normal irregularities, if description of such conditions may be so phrased. The conically shaped cellular process is not present in the new born but there is instead a preformed process in embryo. A small tubercle presents itself in the new born behind the upper part of the annulus tympanicus which in the first years of life has a downward growth and which growth is greatly influenced by muscular action and according to the observations of Zuckerkandl, the mastoid process does not assume its adult form until the third year of life. Lying between the anterior surface of the mastoid tubercle and the posterior portion of the pars squamosa we find the squamo mastoid suture, which if we accept the deductions of Thornby, forms the external wall of the mastoid antrum in the new born, which usually during the first years of life disappears but may be found as a jagged persistent deep furrow in the external surface of the mastoid process.

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The temporal bone contains but one pneumatic space in the new born, which is the mastoid antrum situated behind and above the tympanum, five millimiters in width, and is relatively and *actually* larger than in the adult. I again quote Zuckerkandl as authority for the statement that the cellular proliferation begins at the posterior superior periphery of the antrum and advances toward the transverse sinus and after that toward the external lamella, but Schwartze and Eysell claim that a typical arrangement of the mastoid cells persists radiating toward the antrum during the course of their development, but because of the formation of the new osseous septa and the disappearance of those already formed this is seldom recognized in adult life.

The mucosa and periosteal lining of the mastoid cells are seldom *primarily* attacked by inflammatory processes, but secondarily by extension of these processes from the tympanic cavity, and in this connection let it also be noted that pathological conditions of the external auditory canal are seldom responsible for the transmission of pathology to the mastoid cells.

Tuberculosis, syphilis, diphtheria, influenza, measles, scarlet fever, post nasal growths and any general or infectious diseases through which middle ear infections may be established are all frequent and general contributors to the establishment of a mastoid infection, of the acute variety through extension of inflammation to the covering of the mastoid cells be they of the pneumatic (which is by far the more frequent variety) or the diploetic.

After many years of observation and experience in the demonstrating rooms Politzer makes no exception to the assertion that every acute middle ear suppuration is accompanied by pus in the cells of the mastoid process. This is easily explained if one considers that in every suppuration of the tympanic cavity the lining of the pneumatic cells is also affected and that besides this when the patient lies on his back, the pus flows into the mastoid antrum and cells. The presence of pus in the mastoid antrum and cells does not in any way imply that an abscess has formed in the mastoid process as an acute otitis frequently runs its course without any reactive symptoms in the process. Abscess in the mastoid process is brought about only through germ infection when the lining membrane of the cells and the bony mastoid tissue are inflamed.

A fortunate provision of nature is noted in the exceeding resistance of the bony structure which separates the abscess cavity from the antrum and an investigation of the antrum should in every instance be closely observed because of the tendency of granulation tissue to progress directly from the walls of the abscess cavity into the antrum. The exceeding symptom variation in the stages of mastoid inflammation is a matter of common definite knowledge and it is also clearly understood that a very great number of cases of acute otitis especially in children either subside spontaneously or yield readily to antiphlogistic treatment, while acute purulent mastoid symptoms may develop either before perforation of the tympanic membrane, or they may not make their appearance until an indefinite period following the spontaneous rupture or paracentesis. Centralized pain, or the radiating irregular variety, the extreme tenderness at the mastoid tip, or upon applied pressure directly over the antrum, the comparatively higher local temperature of the affected side, the sagging of the posterior superior wall of the external meatus together with the greatly varying temperature which may range from normal to 105 degrees, all form a symptom total which every presenting septic mastoid furnishes for our guidance in making diagnosis in children.

Accompanying acute middle ear suppuration the reactive symptoms in the mastoid process frequently disappear upon well directed antiphlogistic treatment or may after repeated remissions and exacerbations fail to reappear, but when the suppurative middle ear has been induced through influenza infections or through the influence of the infectious diseases there is much less tendency for the difficulty to subside without surgical intervention as under these conditions the abscessed process is many times more frequent. Again, in the abscessed cavity itself the same variation is prevalent, while probably the greater number of cases disclose one large general abscess cavity it is by no means an exceptional experience to search for such cavity with a continuous disclosing of numbers of small cells each unto itself an abscess. The point of tenderness is in no way a reliable guide to the location of the abscess, neither can the persistent boreing deep pain, nor the shooting radiating surface pain, nor the greatly varying tempera-

ture furnish reliable consistent conclusions regarding the extent or severity of the condition and it would be interesting to know whether it has not been the experience of the physicians present as it has been in our locality for the two or three years just past that the most serious conditions arising out of mastoid infections have developed to a level of extreme danger without the characteristic local symptoms. The early oedema over the mastoid which may vary from a small centralized spot to the involvement of the integument extending to the vertex and occiput and temporal region is generally construed to mean a superficial involvement while such conditions presenting following a period of weeks of middle ear suppuration is always suggestive of deeper bone destruction. A profuse discharge from the middle ear may not necessarily be constant and the most destructive inflammation and suppuration in the mastoid may continue after a complete cessation of the middle ear discharge. Complicating general mastoiditis rather rarely we are confronted with a facial paralysis, which is most often found in the acute non suppurative middle ear inflammation with intense pain at the apex of the mastoid process, the paralysis being due to extension of the inflammatory irritation from the apex to the stylo-mastoid foramen. A continued profuse discharge would naturally indicate the progression of the abscess limitations while cessation of pain and gradually lessening discharge brings the comforting feeling of security, however there are fortunately infrequent instances when after several days of apparent quiet and safety such severe, deep threatening symptoms arise as to make surgical intervention necessary and immediate. Mastoid abscess may persist many months without causing any symptoms or disturbance to cause suspicion of destructive change, and again it has been the observation of all that many of these severe and dangerous conditions develop long after a complete cessation of the discharge, entire repair of the tympanic membrane together with a return of normal hearing.

My colleague, Dr. Rector, and myself have during the past eight months each had two cases of exceedingly extensive mastoid degeneration (and one with a complicating extra dural abscess) without any objective, and with almost no subjective symptoms. 1—The terminations of acute secondary mastoiditis may be recovery after absorption of the pus and after disappearance of inflammatory changes, 2—abscess formation which may heal spontaneously in the *primary* form, 3—softening, absorption and cario necrotic destruction of the bone, 4—spontaneous perforation of the abscess through the external cortical layer, or 5—extension of the suppuration from the mastoid process to the cranial cavity, producing extradural abscess, pacameningitis and brain abscess or to the sigmoid sinus, ending in a sinus phlebitis. When shall we operate—or what are the indications for opening the mastoid process in mastoiditis in children. First, the special micro-organism causing the difficulty should be isolated, frequent blood counts made, and reliable radiograms. When symptoms of abscess formation have been persistent for a fortnight and local antiphlogistic measures have given no relief. The many cases of acute middle ear abscess which run an uncomplicated course to recover would seem to argue a delay in advising operative procedures which naturally seem to a parent so formidable, however if we will bring our judgment to serve us remembering that long continued empyema means extensive deep bone destruction and that sudden fatal intracranial complications may so quickly arise, of the advisability of early surgical interference there can hardly be a question, especially with the extremely low mortality in uncomplicated cases.

A small abscess, superficial, easily accessible, less loss of substance, the much more rapid recovery, shorter time for the termination of middle ear disturbance and the limited number of subsequent treatments all argue for early surgical interference, however the experience of many authorities has taught that in many cases the too early opening of the mastoid process (that is the fourth or fifth day) has an unfavorable effect on the course of the disease and on the process of healing. One finds especially in those mastoids composed of *small* cells which are opened during the first eight days of the disease several disseminated collections of pus spreading in all directions from the size of a pin head to that of a hemp seed instead of one abscess cavity. In such cases the wound heals badly, in fact much worse than one in which one abscess cavity is found as it is seldom possible to remove all the diseased bone substance. Pneumatic mastoid processes form an exception to this rule. If one operates on these mastoids he finds an external abscess even if the disease has existed but a few days. This is due to its vertical portion being

made up of a few large cells which extend right up to the cortical layer, as a rule therefore operations rarely should be performed before the eighth day of the disease, an operation should be performed sooner than this time only under the following two conditions: when a swelling appears over the mastoid process during the first few days of the disease or when without the swelling rigors and symptoms of meningeal irritation appear. In other words when symptoms arise which make it apparent that a perisinous or an epitympanic abscess has developed. Urgent vital indications for opening the mastoid process in acute middle ear suppurations are dangerous complications which the abscess may bring out. The early operation is easily executed because of the superficial location of the abscess and may be performed with slight danger to the deeper vital organs, but anatomical and symptomatic anomalies render a strict "hue to the line" policy impossible and make imperative the individualization and careful observation of every suspected mastoid infection.

ETIOLOGY OF HEART FAILURE.

Believing that heart failure is caused by an infectious process in the heart itself, Theodore B. Barringer, Jr., New York (Journal A. M. A., April 23, 1921) emphasizes the importance of eradicating any focus of infection which may be present elsewhere in the body. It may well be that the removal of such foci will prove to be the most efficacious measure we possess for preventing recurrent attacks of heart failure in patients with chronic heart disease. Barringer analyzed the histories of 154 patients with chronic heart disease with this idea in mind. Five patients gave a history of physical strain immediately preceding the early symptoms, and two of mental strain. In eighteen patients the early symptoms followed directly some infection, like bronchitis or influenza. Of the early symptoms, precordial pain was present thirty-five times. One hundred and seventeen patients showed fever of varying degrees, running a course from three days to many weeks. Sixty-nine patients showed an increase above normal of the polymorphonuclear leukocytes (blood counts were made in 134 cases). Barringer concludes that the fact that 75 per cent of patients showed fever, and that 51 per cent of those in whom blood counts were made showed a leukocytosis, is important evidence that cardiac failure in the majority of instances is a disease of infectious nature in which the site of infection is the heart muscle, or valves or both. The unimportant part which physical or mental strain plays in causing heart failure is shown by the few instances reported, seven out of 154 cases.

THE IMPORTANCE OF EARLY INCISION OF THE MEMBRANUM TYMPANI IN ACUTE OTITIS MEDIA WITH PROFUSE EXUDATE.

BY L. P. ALLEN, M. D., F. A. C. S.,

OSHKOSH CLINIC,

OSHKOSH.

Technique has no place in this paper, but a word regarding the loose use of the word paracentesis in this connection may not be amiss. Paracentesis means merely a puncture of the Membranum Tympani, and when you study the progress of these cases, you must be struck with the great number which, though rupturing spontaneously and in manner similar to what paracentesis would, must have another and freer opening made to insure proper drainage; for good drainage is the sheet anchor of any right treatment of them. If your paracentesis knife is large enough to give such results it is too wide to enter most external auditory canals. And it would be so long it would undoubtedly injure the promontory wall, and add the possibility of an inner ear infection with very probable intracranial involvement owing to the direct connection of the internal auditory meatus with the middle cranial fossa. It is pre-supposed that strict asepsis be the unvarying rule.

We might divide the reasons for this procedure into anatomical, therapeutic and prognostic.

Under anatomical let us consider the relation of the plane of the Membranum Tympani to the promontory wall, and the fact that a spontaneous rupture commonly occurs anterior to the hammer handle. As these structures are inclined toward each at an acute angle with the apex forward, during the diseased process with the great swelling of the mucous membrane lining the cavity of the tympanum, there must be interference with drainage; whereas, if the opening were posterior to the handle where the space is broader, swollen membrane could not obstruct.

Spontaneous rupture occurs too high for good results. If you were to empty a barrel you would not place the bunghole in the top, but in the bottom of the barrel head.

On account of the three parts of the temporal bone being so loosely joined in the young, there is greater danger of mastoid involvement than in older people; there being less resistance to the burrowing tactics of the pus on this account.

In some temporal bones the aditus ad antrum is very patent, and with the small capacity of the tympanum pent up discharge easily invades the mastoid.

As you all know the tegmun tympani is a thin shell of bone and thus is not a very strong barrier to intracranial lesion via the middle cranial fossa. This covers the anatomical field and affords ample cause for early incision.

As to the therapeutic:—A good free opening properly placed relieves the tension and should thus ameliorate the pain, which it usually does in a short time. Further, it is followed by discharge in sufficient quantity for bacteriological examination. Such test disclosing staphylococcus rather than streptococcus hemolyticus certainly relieves you. A good incision having been accomplished, treatment can be more direct, using the method best adapted to the particular case.

All this time you should have had leucocyte and differential counts; and in case of symptoms suggesting deeper involvement a blood culture; not forgetting the importance of a good X-ray plate. The leucocyte count tells you whether the infection is increasing or not, or may be getting no less. The culture when positive is supposed to be pathognomic of sinus thrombosis, especially when accompanied by "steeple" temperature. A negative culture is not valuable, it may have been taken at the wrong time for desired result.

The sooner free drainage is established, the less tissue involved; there is less chance for the affair becoming chronic and the better the chances of good hearing; the less danger of deeper involvement.

So you can see there is every good reason for early operation. There never was any reason to treat these cases on any other lines than good surgery elsewhere, in which cases pus must always be evacuated to obtain the desired result. As the chorda tympani nerve is usually in close apposition to the inner surface of the Membranum Tympani and may at any such operation be severed this was brought forward as a contra-indication, but it does not hold good, for there is one in other ear.

Make a good free incision posterior to the hammer handle in curved form going to the bottom of the membrane and do it as soon as the Membranum Tympani bulges blurring the landmarks. By so doing you will relieve your patient of an increasing menace and yourself of much trouble.

DISCUSSIONS.

Dr. J. A. L. Bradfield, La Crosse: Mr. Chairman and Gentlemen. I will start the discussion because it is certainly a subject of which we hear a great deal in the profession and which we can all consider and discuss with a great deal of profit.

The first thing that I would call attention to is early paracentesis in acute suppurative otitis media. Acute non-suppurative or serous may often be aborted, but the acute suppurative otitis media never, and the sooner we have free drainage, the better; and it is important that the general practitioner should have a better idea than he usually has in regard to the innocency of this operation. The damage done by early free paracentesis is so small, compared with the perforation from necrosis, that there is no comparison between them. An early paracentesis aborts many cases of acute mastoiditis. I am fully convinced that the delay in operations in acute otitis media with mastoiditis is an error. The early mastoid operation is so simple and so safe that we cannot afford to sacrifice the possible loss of hearing to any inconvenience that results from the operation. When we have a mastoiditis of sufficient virulency to threaten any of the delicate organs of hearing, early mastoidectomy should be made. Drainage is the object and essential factor in treatment of all acute suppurations. It would seem to me that there is no other field in surgery where so many mistakes are made in the treatment of suppurative disease as in acute suppurative otitis media. For 25 years I have been emphasizing to the profession the importance of simple surgical drainage in acute suppurative otitis media. The less we drive back the secretion into the ear with syringes and plug up our external meati with anything that interferes with free drainage, the better our treatment of these cases, and I really believe that a syringe should never be used in acute suppurating otitis media.

I wish to report two cases which Dr. Smith and I treated this spring. They were cases which I think tested our surgical skill and best judgment more thoroughly than any others which have come in our practice. The first was a boy referred to us after a few days, suffering from a severe attack of acute otitis media, with accompanying suppuration. The discharge was of a mucous nature. The pain was very great. The temperature only about 99. This case occurred during the epidemic of influenza that swept over the country, and at a time when operations were scarce in the hospitals all over the country, and the death rate never so great following surgical operations. The results in our hospitals were such that we quit operating in all cases where not absolutely necessary. This boy, under drainage and hot applications a few days, apparently did well. But the boy looked sick. The white blood count only slightly above normal. I congratulated the father on a nice recovery in a very severe case. Five weeks later the boy came back to us with a terrific pain and headache, considerable discharge of a serious nature. We operated, finding a very large severely necrosed

mastoid, curetting very carefully necrosed bone from over the lateral sinus. The recovery from the operation was very good. But the boy still complained of severe pain in head; looked very sick; yawned frequently. We consulted with our general men, and we went over the case very carefully time and again. Blood examination made; Wassermann was negative. The temperature was never a hundred—99 and a little over. The fundi normal, no paralyses. The boy was from a very hysterical family, and the general men pronounced it hysteria. We were not satisfied, and advised consultation with brain specialist. The discharge subsided. There was no involvement of the veins of the neck, no symptoms of a thrombus. The discharge grew less of a mucous nature, not virulent, no odor. He went along until finally one day he picked up and went to Rochester, and the father told me after he came back, that they opened his head, finding it full of pus. After repeated operations the boy died some weeks later. Considering all conditions we do not think we were justified in operating when we first saw the case.

And in justification of that we report attention to a second case, being one sent to me directly for a mastoidectomy. They wanted us to come in the night to operate. We saw the boy the next morning, with a good deal of the same condition, the same influenza infection, a terrific discharge from both ears, a temperature of 104; it ran 104 to 105, and as high as 106 for several days; a skin eruption appeared over most of the body, which to our mind was toxic. The fundi were a puzzle. The vision low. There was a chronic choroidal congestion. I could not determine at that time that there was any retinitis or papillitis. There was no paresis or paralysis. The white blood count ran as high as 20,000. We felt that under the circumstances the poison and infection was due to the general disease, and not to the mastoid; still we were fortunate in having a visit of Dr. Hitz to the city at the time. The Doctor looked at his fundi, and, while he said he was not an oculist, he thought sure we had papillitis. The error of refraction made this difficult to determine. The Doctor said, you have done the right thing because you have done what your judgment tells you was right, but he would have operated. The boy went along, I have forgotten how many days, when he very quickly recovered, and we allowed him to go home with a request that he return before school, for an examination of the eyes, and the results. He returned about 3 or 4 weeks ago with almost perfect hearing, the membrane tympani fully restored, not a symptom of anything to refer back to the mastoid trouble.

These two cases were so parallel and yet so divergent. We still feel that we did the right thing under the circumstances, and also feel that under other circumstances we would have done the very wrong thing in not operating both of them promptly.

Dr. Frederick A. Davis, Madison: Mr. Chairman and Gentlemen. As far as I am able to judge, I think these are certainly two very excellent papers, and I think we are all more or less agreed that with definite symptoms an early operation is the correct thing. I noticed that one of the gentlemen in discussing the incision mentioned that early incision in purulent otitis media is always indicated. I think it is often a very difficult problem to tell in the first 24 to 48 hours whether your process is suppurative; I think it is practically impossible to tell; you have to assume that any violent acute middle ear infection is very liable to become purulent. In my experience the majority of them have no purulent discharge at the start, certainly the first 12 or 24 hours, so that I do not think that differentiation can be made. At least I have not been able to make it. The matter of bulging of the drum I do not think is the most important factor indicating the opening of the drum. I think you will all bear me out in this, that we often find a drum that from the discoloration and change in the lustre, we decide to make a myringotomy when there is no bulging whatsoever, and that very drum may be retaining pus behind it. I very often have that experience. Certainly an incision should be made as early as possible and the diagnosis established. I think we can avoid a myringotomy at times by proper medical procedure, but I think that if there is any doubt in our minds, the drum should be freely incised always.

As to early operation I believe Dr. Cook mentioned 8 days. Of course he supplemented that by stating that we had to take the individual case. It has been my practice, as I recall it, rarely to operate before the end of two weeks. I think often there may be an indication to operate at the end of 8 days, but generally speaking I do not usually open an acute mastoid until the end of the second week. I find that violent acute otitis media, with very tender mastoid, may rapidly clear up during those 3 or 4 critical days at the end of the second week. A serious operation is thus avoided which to the surgeon may be simple enough, but to the patient it means great anxiety and a long post-operative recovery.

Dr. Arthur F. Holding, Jackson Clinic, Madison: Mr. Chairman and Gentlemen. It is with some diffidence that I enter into this discussion, for I am somewhat of a stranger here. But one thing that strikes me in speaking of this bacteriological examination is that nothing has been said about the differentiation of the bacillus mucosus capsulatus, and it seems to me that the case referred to was probably a case of bacillus mucosus capsulatus that was muco-purulent, and produced the bad result, or the result that required a second operation, and a second case which occurred spontaneously.

In connection with the paper on "When to Operate on the Mastoid, or the Indications for Operating on the Mastoid," in connection with this same bacterium, I would like to call attention to an indication when not to operate in the presence of this bacterium. Dr. George Dixon has a very large number of cases where he has X-rayed mastoids in the presence of this bacterium and showed extensive destruction of the bone and formation of abscess which has gone on to meningeal irritation. Many of these cases were without hardly any clinical symptoms, and those cases operated on in-

variably died. So that in his notes they have come to the conclusion that when they come into the presence of this destruction and in the presence of this bacterium the surgeon is justified in advising against operation, because the patient will almost invariably die. So I think the differentiation of the bacterium present is a very important item as to the indication for operation, and sometimes against operation.

Dr. F. S. Cook, Eau Claire: Mr. Chairman and Gentlemen. I thoroughly agree that the one indication in these cases is early drainage. Drainage is what we want. The small paracentesis hole or puncture, I do not think is the proper thing. I believe if a man is going to do that he better make a large incision.

Another type of cases that I look on with fear is the well developed mastoid cases that refuse operation, and in the course of 3 or 4 weeks they go on to resolution and apparently get well. In fact, as I go over the subject in my mind I recall the case of a girl 25 years old, who had just this picture. The radiograph showed crowding in all the cells, and the ear was draining profusely, the temperature ranging low—that is, it was not subnormal. But to make a long story short, she refused operation and apparently got well in 3 or 4 weeks. But about 4 months after that I was called to see the case again; she had been taken suddenly ill and died within 3 or 4 hours. At autopsy we found a large abcess in the brain, leading from the mastoid cell. I am firmly in favor of draining those cases, and at least telling the patient of the danger that is lurking behind them.

Dr. Joseph Bellin, Green Bay: Mr. Chairman and Gentlemen. I wish to emphasize one fact that Dr. Brooks mentioned with reference to the acute cases that come to you exhibiting very little pain, and perhaps the infection having gone on for just a few days, and still there seems to be a very considerable tenderness on pressure. Dr. Brooks mentioned the fact that upon operation you found so much destruction of bone; that has also been my experience within the past year, having had several of these cases where the patient seemed to be almost free from pain, with the exception of the tenderness on pressure and on opening over the mastoid region you would find an immense amount of destruction from pus. It seems to me that in these cases one cannot operate too early and secure very free drainage as soon as possible, so as to avoid this immense destruction.

Dr. S. G. Higgins, Milwaukee: Mr. Chairman and Gentlemen. I feel like reporting a case I saw a year ago, which was referred to me by a pediatrician. He could not find any reason for the temperature of the child being high nor for the great prostration. Two other children in the house had had influenza, and he assumed that this child had the same ailment, but he could not find any lesion. An aurist had reported that the ear-drums were not bulging, that they were not red, and he did not believe that he should do a paracentesis. When I arrived I found that the tympanic membrane was not red, but it seemed to be edematous, and looked like water-soaked membrane; the land marks were not entirely obliterated, but the membrane looked thickened. I rejoice that I made a free incision: the temperature subsided quickly. The child was absolutely prostrated, almost in a condition of sleeping sickness, (although it is not a comparable situation,) the child would not speak, or turn over, or respond to any request. It happened that in the same family the father had had a mastoid operation when under the case of this colleague. The family afterwards stated that he refused to incise the tympanic membrane: and that now they were in accord with the principle of early incision.

While I agree with Dr. Davis in making incisions early when there is a threatened suppurative otitis media, I can not go so far as to say, as some of the other speakers did today, that I would operate acute mastoiditis as soon as I knew that it was a mastoid with inflammation, because I believe if you have a suppurative mastoiditis early, free incision of the tympanic membrane will usually establish sufficient drainage. We are justified in waiting ten days to two weeks before we operate an acute suppurative mastoiditis when there is liberal drainage from the ear.

Dr. L. A. Larsen, Colfax: Mr. Chairman and Gentlemen. I am going to talk more from the standpoint of the general practitioner than from that of the specialist. I have been listening to all of these papers and discussions with great interest. I think the specialist ought to be a little more definite and determined in his expression about what to do under these circumstances. That is, in cases of suppurative otitis media, etc. The general practitioner is rather slow in sending these cases to the specialist. He generally tells his patient to wait and let the abscess rupture, and then we will tend to it and clean it out afterwards Now that is the general condition of affairs as I find it out in the country amongst the general practitioners, and it has been annoying, and is, to say the least, a dangerous procedure. But during these last two epidemics of influenza I have seen quite a number of these cases, and in some of the cases, I might say most of them, the conditions have been such that paracentesis would be warranted, but they have been allowed to go until rupture, and you know the trouble we have then. I have tried to impress upon the general practitioner that I have come in contact with that whenever a case like that comes to them it ought to be opened up immediately, and if that is done the procedure of healing would be more rapid, and the dangers more readily eliminated. Wherever I found an inflammatory or edomatous condition my method has always been to simply make a good free incision; if there is no pus, very good and well; if there is serum there, also good and well, and we have now free drainage. I have noticed that those cases would clear up in very short order. So I would suggest that the specialist make more of a campaign amongst the general practitioners. The general practitioner is really behind the times on this subject.

Dr. E. A. Brooks, Appleton: Mr. Chairman and Gentlemen. We have a spontaneous recovery in so large

a percentage of these cases through the spontaneous opening made through the tympanic membrane, that it is only reasonable to know that we would have a very greater increased proportion of them recover by largely facilitating that drainage. I believe there is no question about the point that Dr. Bellin makes in that regard.

It is sometimes a little difficult to overcome the aversion that people have to "cutting the drum," as they call it. Just last week a very intelligent woman brought her daughter into the office and said the daughter had a terrible earache, but whatever you do, don't cut her drum. Examination in that case showed that the drum was protruding well into the external canal, and was very red and of course it is unnecessary to say that she did not go out of there until it was thoroughly incised, and of course the mother is a convert to this method of procedure at the present time.

In reply to Dr. Davis notation on the 8th day procedure, I wish to say that I did not intend to convey the idea that the 8th day was the limit that I use for watching these mastoids. I think I would be inclined to be more conservative than the average regarding that, and if the patient is under observation and no complications arising, I do not ever operate under two weeks, and very seldom under 3 and 4 weeks, as we know many cases after that period, will go ahead to complete recovery, with good thorough drainage. I am never in a hurry to open the mastoid as long as I have the child under observation.

The laboratory I think is a very important factor in all of these cases. The strain of bacteria, the blood count, and the X-ray, all taken together, are a great help.

And as Dr. Larson says, we are confronted many times with this idea of "let it rupture, and it will probably take care of itself." That is one of the most dangerous things we have to contend with. I think the general profession is waking up to the idea that that is not true, and that it is not the thing to do.

Dr. L. P. Allen, Oshkosh: You will notice that the title of my paper was "With Profuse Exudate." I did not say "exudate," I said "profuse exudate," and we all know that we do have cases with an exudate that is not profuse; but do have some exudate. We also know the history of those cases. They are of a chronic type. That exudate becomes organized, we get a retraction of the drum, we get an ankylosis of the auricular chain You know what the ultimate result in those cases is, a loss of hearing and an irreparable damage done to the ear. I want to make that point strong that my paper was "With Profuse Exudate." I often wish though that those exudate cases of that type would become profuse, because I know that if I could drain that exudate that I could save the hearing.

I am familiar with what Dixon has done, and I want to tell you something else, and Dr. Higgins spoke also about this condition, where the drum was so affected. We know that in the Army Training Camps we had that very thing all over the drum, and they didn't know whether to do a myringotomy or not. They finally decided they had to, because they never got well unless they did. They know too that if this thing is done under aseptic conditions, take the canal wipe it out nice with alcohol, and you will be pretty sure you are going to have a clean job; immerse your scalpel in carbolic and alcohol, and you know that you have a good sharp knife, and a clean one. You can get at the bacteriology of these things in another way though. You know how your infection occurred. It occurred by the eustachian route. If you have a "bug" of a certain sort in the throat, you know that that same "bug" has probably traveled up that eustachian tube; it did not come from the outside. Therefore, you can get an idea as to whether this case is suppurative or not, or likely to be suppurative or not. And your type of pathology in your mastoiditis commonly runs along two lines; it is either hemorrhagic or it is cell type. If it is cell type it is going to spread and spread and spread; if it is hemorrhagic it may not, and still it is likely that it will.

There is another "bug" that is mixed up in this game too, and that is the viridans. That causes great destruction too. I had a case just recently that has given me some things to think about, that of an old man 73 years of age. The case had the same kind of a history that Dr. Bradfield's case did. Everything apparently all cleared up. The "bug" in that case was staphylococcus, and it always remained staphylococcus. Everything healed, and healed slowly; the discharge stopped, just retrogressed, it did not stop abruptly. You know the early idea with a lot of these cases was that if you stopped that discharge in a chronic case, then you had a deeper involvement and probably fatal issue. This one did not do that; it just gradually retrogressed, and that man came in and he had all the signs of the mastoiditis, and he had edema and sagging of the posterior wall, tenderness on deep pressure over the tip, and over the antrum. They used to think if it was over the tip alone it would clear up. He asked me what I thought about the case, and asked me if I thought X-ray would do us any good. I told him no, I did not think it would. I had seen this man on Thursday. This was Sunday. He said, "what do you expect to find?" I said, "I expect to find an inflamed mastoid with very little free pus." I found about three drops of pus; I found a cell type of mastoiditis. I do not care if it is 24 hours since the time that I saw my case, if I am in doubt on any case as to whether I should operate on it or not, I put it up to the X-ray. I also make my bacteriological test, and I also, in case I have a temperature,—and in all of these cases where they suspect it I make a temperature and pulse rate chart, taking that every two hours; then I know whether I am getting a "steeple" temperature or not, and if I am getting a "steeple" temperature I make a blood culture. We know it is quite commonly agreed now that the blood culture is a pathognomonic sign of thrombus. If you do not get a positive culture at first trial, do not be satisfied with that; a negative culture amounts to nothing probably, because it may not have been taken at the right time; but if it is positive, it is everything.

Another case had been diagnosed as parotitis, and there was a swelling at the angle of the jaw, a temperature of 103 and a fraction, and the child was complaining of pain. I took him down to the hospital and found that mastoid all diseased. It healed up kindly, and during the course of healing—it was a mixed infection—the other ear did the same thing, that is to say, there was pain along the side of the head on the opposite side, the drum was bulged; it was incised at once, and cleared up. I like to think about that case. Had it not been diagnosed as parotitis to start with, probably that ear would have cleared up as on the opposite side; it was in the same head at any rate.

If you follow some of the things that Politzer tells you, you will have many testimonials in the cemetery as to your skill, because you know that Neuman and Politzer disagreed, and the reason why they disagreed was quite largely over this matter of the mastoiditis. And we know another thing, that if we get facial paralysis in these cases that it indicates probably an involvement of the inner ear, does it not? We learned that from Barany, and we have to make vestibular tests, to be sure where we are at in these cases.

Further, another thing—spinal puncture. Some of these cases might probably lead us up to the matter whether to do a spinal puncture or not. When we do a spinal puncture we are going to draw into that spinal canal anything that is available, anything in the region where it has communication with any space around the ear, and we are liable possibly, to add to our infection. We ought to think pretty carefully before we do anything of that sort.

As to how the operation in a case of mastoiditis will affect the hearing: if it is an acute case, I never think about it at all; we know that we are not getting sufficient drainage anteriorally, or, let us say, through the drum, and we know that if we open up the mastoid we are going to get drainage. That is one of the very great reasons for operating. We know that it has to be that way.

Dr. Brooks spoke of a case that he had where there was scattered all through the mastoid, a package of inflammation. Of course that was in a young child. I believe, Doctor, that is the regular infantile type of mastoid. You know Cheatel has examined hundreds of those bones, and he has named that type of mastoid, the infantile. I happened to have one, which was the case of my office girl, and she had the infantile type. The X-ray did not show us very much. It did show that there were areas that were inflamed, and Cheatel says that if the cortex is removed, relief is given to the tension; it does not make any difference whether you open all the cells or not, your case will clear up. It did in her case.

RESISTANCE TO TUBERCULOSIS.

H. J. Corper, Harry Gauss, and O. B. Rensch, Denver (Journal A. M. A., April 30, 1921), believe that carbon dioxid may play a significant role in the resistance to tuberculosis. Three per cent carbon dioxid inhibits the growth of tubercle bacilli in the test tube, and 15 per cent is tuberculocidal. Cultures of tubercle bacilli buried in the tissues of animals and permitted to acquire the carbon dioxid concentration of the body are definitely inhibited in their growth, while other cultures similarly buried, except that ingress of atmospheric air is permitted, show no inhibition. This reopens the consideration of the influence of fatigue, exhaustion, exposure, metabolic diseases, etc., as probable etiologic factors in the causation of tuberculosis in view of their ability to alter the carbon dioxid content of the body.

THE MEDICAL PROFESSION AND THE PUBLIC.

William J. Mayo, Rochester, Minn. (Journal A. M. A., April 2, 1921), discusses individualism in medicine and medical cooperation. He states that highest intelligence is a political liability, and lowest intelligence is a menace to good government. Functional nervous diseases are the smoke screen of quackery because the public at large fails to appreciate the essential differences between what we speak of as functional nervous diseases and their mimicry of the physical. The various cults patronized by the public represent treatment without knowledge, in response to the desire of the people for a remedy for existing ills, real or imaginary. The "patent medicine" business is based on the same desire for a remedy and faith in a suggested cure. The public is satisfied with each new cult until its failure becomes known. Hope springs eternal in the human breast, and quack remedies and cults with new names take the place of the old. The striking feature of the medicine of the immediate future in Mayo's opinion will be the development of medical cooperation, in which the state, the community and the physician must play a part. Health insurance, while sound in theory, has not taken human nature sufficiently into account. The medical profession can be the greatest factor for good in America. The greatest asset of a nation is the health of its people. The real job of the medical profession is the extension of knowledge of what the medicine of today is doing and can do in the future, and this must be done by collective effort. Properly considered, group medicine is not a financial arrangement, except for minor details, but a scientific cooperation for the welfare of the sick. Medicine's place is fixed by its services to mankind; if we fail to measure up to our opportunity it means state medicine, political control, mediocrity, and loss of professional ideals. The members of the medical fraternity must cooperate in this work, and they can do so without interfering with private professional practice. Such a community of interest will raise the general level of professional attainments. The internist, the surgeon and the specialist must join with the physiologist, the pathologist and the laboratory workers to form the clinical group, which must also include men learned in the abstract sciences, such as biochemistry and physics. Union of all these forces will lengthen by many years the span of human life, and as a byproduct will do much to improve professional ethics by overcoming some of the evils of competitive medicine.

FUTILITY OF ATTEMPTS TO CONVINCE AN ANTIVIVISECTIONIST.

The classical allusion to a maximum disturbance is "a bull in a china shop." However, if we are to believe the report which recently appeared in the Washington, D. C., Evening Star, an even greater disturbance may occur when a lover of animals speaks to a meeting of antivivisectionists. Perturbed language marked the meeting of the National Society for Humane Regulation of Vivisection when its members were addressed by Ernest Thompson Seton. Mr. Seton, it is reported, had the audacity to say to these antivivisectionists that the rights of human beings when they clashed with the rights of animals should be paramount. Then he added insult to injury by remarking that he noticed furs being worn by many of those of his audience, and that animals had suffered from two to three days' agonies in traps in all probability to provide these furs. At the conclusion of the address, one of the woman antivivisectionists asked the speaker if he believed that animals should be put through the agonies of so-called scientific vivisection in order to allow experimentation of theories. Mr. Seton replied that if his child was threatened with blindness and could be saved only by the killing of an animal, he was in favor of the vivisection of one animal or 100 animals to make it possible. The woman declared that she would go blind or lame or ill rather than cause 100 animals the agonies or suffering of vivisection. Then Mr. Seton countered with the direct question, "Has the speaker a child?" and the lady admitted that she had not. With the usual cool and calm logic of an antivivisectionist, she remarked that she had a widowed sister who had a child, and that this child, at the age of 5 years, on hearing of vivisection had stated that it was "the devil's own work." Mr. Seton inferred that it was his belief that the words had been put into the child's mouth. It was obviously a precocious little prig. Mr. Seton wasted his time trying to convince an antivivisectionist. It can't be done. Logic has no appeal where unadulterated sentiment predominates.—*Jour. A. M. A.*, Feb. 5, 1921.

POSTURAL REST FOR PULMONARY TUBERCULOSIS.

Excellent results have been obtained by Gerald B. Webb, Alexius M. Forster and G. Burton Gilbert, Colorado Springs, Colo. (Journal A. M. A., March 26, 1921), in more than 200 patients with tuberculosis who were subjected to postural rest as a means of treatment. At the same time, so little attention has been given to the subject by those who specialize in pulmonary tuberculosis, that the authors feel warranted in again discussing this subject. The failures encountered have been in patients either too far advanced with bilateral disease, or in those considered favorable for the application of this procedure, but who failed to carry it out faithfully. Pulmonary tuberculosis is usually in the early phase a disease of the upper lobes, and the movement of these lobes is easily controlled by postural rest. As a matter of practical experience, it has not been noted that postural rest, with the preliminary increased excursion of the diaphragm, brings any disaster to patients when the disease has involved the lower lobe. Usually when such a phase of the disease is reached, pleural adhesions are likely to prevail, and these possibly modify the motion of the diaphragm. In the normal person there is little hyperemia of the dependent lung during sleep. In a tuberculous patient, a moderate degree of hyperemia is produced by prolonged rest on the affected side. Certainly such prolonged rest does naturally assist in the moving over of the heart and of the mediastinum to the side of the more diseased and dependent lung. In patients with much expectoration, a short time several times a day is allowed to be spent lying on the less affected lung. This accelerates drainage. The patient then turns on the side of the more diseased organ, beginning with only a few minutes and gradually increasing the time until twenty hours or more a day are spent lying in this position. A small pillow is often placed under the ribs to increase the splinting effect. Results are obtained in a few weeks by the application of this thorough rest which are comparable to those obtained more quickly by artificial pneumothorax. Fever will subside, cough will cease, and sputum of many ounces may decrease to a mere trace. It has been of special interest to note the decrease and at times almost complete disappearance of rales. Many patients, considered as certainly requiring the application of artificial pneumothorax, have been restored to health by this simple procedure.

MEDICINAL USE OF WHISKY.

Things are not always what they seem, says the poet. And in the world of practical affairs, general statements, even oft repeated and popularly accepted, do not always check up with the facts. Much has been made of the claim that the adoption of federal prohibition has seriously interfered with the use of whisky for medicinal purposes by physicians. The Anti-Saloon League of Delaware, in a recently issued circular, presents an interesting table on this question, based on information furnished by federal and state officials and statistics taken from the American Medical Directory. According to this tabulation, there were, at the time the federal prohibition amendment was adopted, twenty-four states—one half of the entire number—whose laws forbade either the writing or the filling of prescriptions for whisky or brandy. In these states, naturally, no permit under the federal law could be issued to physicians. In the remaining twenty-four states, in which there is no such law and in which, under the Volstead act, permits to prescribe whisky may be issued to physicians, there are, according to the American Medical Directory, 112,238 practicing physicians. Yet in these twenty-four states, only 33,379 physicians—29 per cent—have taken out permits. Evidently, the remaining 71 per cent do not regard whisky as of enough value in the practice of medicine to go to the trouble of taking out a permit.—*Jour. A. M. A.*, Feb. 19, 1921.

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EDITORIALS

THE PHYSICIAN

NOTHING is more estimable than a physician, who, having studied nature from his youth, knows the properties of the human body, the diseases which assail it, the remedies which will benefit it, exercises his art with caution, and pays equal attention to the rich and the poor.—Voltaire.

THE HOME COMING MEETING.

EVERYBODY now knows of the big time we are planning to have at our 75th anniversary. The scouts and trail-blazers are laying their lines and sharpening their tools for the event. The actual meeting dates are the 7th, 8th and 9th of September but why not make it from the 5th to the 10th? Now, doctor, you know that if you leave in the middle of a week, the whole week is broken into for work. Therefore, leave at the beginning of the week, make it a big holiday and a profitable time as well.

On another page is the Provisional Program for Clinics on Monday and Tuesday. You surely will want to take this in. In fact, you just can't afford to miss them. There is a choice for you so that you can get just what you want.

Remember, your State Society celebrates its 75th birthday. You must not miss it. If *you* don't come, how can there be any celebration?

Watch the pages of the Journal for notices.

"HE PROFITS MOST WHO SERVES BEST."

NO one except the iron-hearted could refuse to respond to the piteous appeal of our Worthy Editor when he requested the poor County Secretaries to assist him in filling the Editorial page of the June issue of the Journal. Therefore the response to this appeal prompts me to do "my bit" but only with a great reluctance and some trepidation. Several months ago the office of Secretary was wished on me wholeheartedly by the Nominating Committee (myself being one of them) of our Society so that the office was accepted with no misrepresentations on their part. Previous to this time I had always viewed the Society from the outside in; at this time the opportunity was presented to view it from the inside out. Upon assuming this office, it was quickly found an apathetic condition existed on the part of the individual members as regards interest, enthusiasm, energy, loyalty and sacrifice. The functionating composite society is made up of individual members and it will only functionate to the fullest and most complete degree as the individual

members appreciate their own individual responsibilities to the organic whole. There is no such thing as perpetual motion in our organization nor can any one get out more than they are willing to put in. "He profits most who serves best" is as true in medicine as in any of the walks of Commercial or Economic life. The Secretary can serve best when he has the full cooperation of his fellow members for the old adage "that in union there is strength" is as true in our local organization as the very foundation upon which this nation stands. When these few facts were presented to our members there came forth a response spontaneous and sincere from each member called upon that has made the office of Secretary a pleasure and an honor to hold and fill. As the mouthpiece of our local Society I would have each and every County Society of Wisconsin emulate Outagamie.

V. F. M.

SOME QUESTIONS ANSWERED.

WHAT IS THE AMERICAN MEDICAL ASSOCIATION?

IT is the national organization of the medical profession and is made up of the combined membership of the various state medical associations, which, in turn, are made up of local (district or county) medical societies. More than 80,000 physicians are members of the American Medical Association, among them being the leading members of the medical profession of the country. Of these members, more than 44,000 are Fellows, *i. e.*, members who have associated themselves to form the Scientific Assembly.

WHAT ARE SOME OF THE THINGS THE AMERICAN MEDICAL ASSOCIATION IS DOING?

It publishes, weekly, THE JOURNAL of the American Medical Association, the leading medical Journal of the United States, having a circulation (averaging over 65,000 weekly) far exceeding that of any other medical journal in the world.

It maintains a *Council on Pharmacy and Chemistry* to investigate and pass on medicines used by physicians.

It maintains a *Chemical Laboratory* which makes original investigations of a purely scientific nature and which also analyzes nostrums of various kinds.

It maintains a *Council on Health and Public Instruction* which (a) cooperates with other organizations interested in public health; (b) conducts a Speakers' Bureau to supply speakers for public meetings, for addresses on public health topics and (c) prepares and distributes pamphlets on various subjects relating to public health.

It maintains a *Council on Medical Education,* which (a) conducts a clearing house for information regarding medical colleges, medical education and licensure and publishes statistics on those subjects annually, and (b) inspects and classifies the medical colleges of the United States and issues pamphlets for the information of prospective medical students and others interested.

WHAT IS THE PROPAGANDA DEPARTMENT?

The "Propaganda for Reform" is one of the departments of THE JOURNAL. It has for its primary object the prevention of medical fraud on the public. It has become a clearing house for information on the subjects with which it deals. Federal departments at Washington, state health officials, municipal health departments, publishers of magazines and newspapers, health officials in various parts of the world refer inquiries to the Propaganda Department for information on medical frauds of all kinds.

Information Collected—Through: (1) Original investigation supplemented when necessary by analytical work done in the Chemical Laboratory of the American Medical Association. (2) Data received from state and municipal boards of health, federal reports, information published in technical and lay journals, both domestic and foreign; reports of special commissions such as the Select Committee on Patent Medicine of Great Britain, Royal Commission on Secret Drugs, Cures and Foods of Australia.

Information Disseminated—Through: (1) The Propaganda for Reform Department of THE JOURNAL of the American Medical Association, (2) Letters in answer to inquiries, (3) The matter used in (1) and (2) is published in book form ("Nostrums and Quackery") and also is in inexpensive Pamphlets, (4) Educational placards that are being used by various organizations interested in the public health, (5) Public lectures illustrated with lantern slides.

Many newspapers and magazines of the better class call on the Propaganda Department for in-

formation regarding the advertising of products that come under the purview of the Propaganda Department. The Associated Advertising Clubs of the World, also the National Vigilance Committee, keep in touch with the Propaganda Department and use the lantern slides and various publications put out by the department.

Large business organizations, having departments for looking after the health and safety of their employees, call on the Propaganda Department for information regarding medical devices and products that may be offered to their workers. These organizations have also purchased large quantities of "Nostrums and Quackery" and the pamphlets on the nostrum evil for the use of their employees.

In the Propaganda Department, advertising matter and information regarding hundreds of medicinal preparations, medical devices, etc., is kept on file. The matter is correlated by means of a Card Index containing many thousands of cards.

AS OTHERS SEE US.

(Editorials from the Lay Press.)

THE PUBLIC AND THE DOCTOR.

The legislature gets an infinite variety of subjects to deal with, and does pretty well when it steers a common-sense course among the cries that are raised. It hears a hue and cry that Bill 348S, for example, is an attempt to put the chiropractors under the heel of some other group of doctors.

The state takes a hand in the practice of medicine because of a tremendous public interest—nothing less than its interest in its own life and health. The layman doesn't profess to know much about allopaths and homeopaths and the rest, but he believes in his right to such protection as is afforded by a law fixing minimum requirements for those who want him to trust himself to their care when he is sick. From a good deal of experience, he doubts whether the minimum standard is too high. The state requires four years' study before it will even let a man call himself a veterinary. What the legislature is asked to do in Bill 348S is to make the requirement of education and understanding uniform for all who ask the state's permission to represent themselves as ready to take in charge the life and health of their fellow men. It is not asking too much.—*The Milwaukee Journal.*

NEW FIELD OPEN TO MEDICAL SCIENCE.

Airplanes entering the United States are subject after November 1 to the same quarantine regulations as steamships, says the United States Public Health Service. How are they going to quarantine the whiskey-birds, hopping the border at 5,000 feet altitude? With a high tariff wall? Or will some of the U. S. P. H. S. doctors take a post-graduate course in pursuit flying and Lewis gun technic? Would that W. S. Gilbert had lived to immortalize the aerial medico, twin to the horse marine:

"I'm Pilot Jinks of the Flying Docs;
No border-jumper at me mocks.
My patients up aloft I glean
In ethical enforcement of the quarantine.
My method always cures or kills—
I treat them all with Dum-Dum pills. . ."

La Crosse Tribune.

COUNTRY DOCTOR HAS HIS REWARDS.

The Massachusetts country doctor, it is estimated, takes in about $2,000 a year. That is more than most of his clerical brethren earn. But it is little enough for a man fit to repair the delicate human enginery. The real reward in his profession, as with the rural ministry, lies in the respect he commands, and the chance to be regarded as the best friend and helper of a wide circle. Strong as the lure of a city practice is to many a physician, there are some who are fortunately content with the less conspicuous place in the sun of public recognition and professional acclaim that rural practice offers. It does not follow, however, that a doctor in a small place is obscure. Rochester, Minnesota, is not so big as Philadelphia, Boston or New York, yet a multitude in quest of healing has hit the trail to the shrine of eminent physicians there. William Dean Howells was fond of pointing out the excellence of the literature produced in quiet country places, and it is true of other forms of healing that not all of the ablest ministrants are metropolitan.—*Philadelphia Public Ledger.*

CHIROPRACTIC.

A bill to license chiropractors, giving them a status equivalent to that of regular physicians, is before the state legislature. This measure should be defeated in the interest of the public welfare.—*New York Tribune.*

It is not for laymen to dogmatize on this perhaps delicate professional question or to rush in where specialists not a few might fear to tread.

But the readers of the above pronouncement may wonder whether the rather unprepossessing description of chiropractic upon which it is predicated is strictly fair and correct.

Admitting that the manipulations of the chiropractor may be beneficial in some cases (though futile and possibly injurious in others), the critic above quoted intimates what may be called a diagnosis of chiropractic, which, if true, might bear out the argument against putting these practitioners "on the same plane with the doctor of medicine."

Chiropractic, we are told, is based on the theory that all disease is "caused by a derangement of the spinal column, with resulting nerve pressure," and by consequence the "sole method of treatment is manipulation of the spine."

In other words, by that description, manipulation of the spine would be recommended as a panacea or cure-all by these possibly misrepresented specialists—a practice which might recall to those familiar with polite literature that of the celebrated Dr. Sangrado of Valadolid who undertook to cure all the ills the flesh is heir to by one treatment, namely, copious blood-letting accompanied by keeping the tank system of the patient as full of water as it would hold.

Ascribing all diseases to a common cause or origin naturally and logically leads up to the panacea and the experience of mankind has not been favorable to panaceas, whether in the field of medicine or politics, or whether recommended by the Dr. Sangrados or the Dr. Bryans.

Our impression of chiropractic is that it is more moderate in its claims than might be inferred from the comments above cited, and it is only a truism to say that all innovators must expect to have a rough time of it with the orthodox in their efforts to get a foothold.

What a row there was for example many years ago in England when the eccentric Lady Mary Wortley Montague brought home from Turkey the notion of inoculation. As Bagelot says: "Medical men were angry because the practice was not in their books, and conservative men were cross at the agony of a new idea."—*The Milwaukee Sentinel.*

THE PELTIER BILL.

In opposing the effect through the Peltier bill to repeal present statutes enabling measures by the public authorities to fend off smallpox epidemics through vaccination requirements, the Milwaukee Journal well concludes:

"The unfortunate thing is that if the lawmakers pose as medical experts, the whole state will have to pay the penalty."

The question involved in this bill is primarily a medical one, and therefore one for medical authorities to determine: the efficacy of the statute whose repeal is sought and the medical method it prescribes as a check on the spread of smallpox.

So far as we know, real medical authority indorses the practice as such and the State Medical Society through its legislative committee urges the defeat of the bill to repeal. That, we should think, ought to settle the matter with the legislature.

The provision it is sought to repeal is compulsory only by indirection. It enables health officers to promote vaccination at times of threatened contagion by authorizing them to exclude from the schools at such times children who refuse to be vaccinated.

As for constitutionality, such authorization would appear to fall clearly within the general police powers of the state for the public protection.

The testimony of health officials who are fighting the bill is that at this time a smallpox epidemic is threatened. And yet at precisely such a juncture it is sought, through some wiredrawn contention about constitutionality, to snatch from the hands of these authorities about the only efficient weapon they have as officials to fight off the danger to the public.

Everybody seems to be setting up as doctor in these days. What sort of 'paths" the gentlemen are who medically sponsor this bill (if any such there be) we are not informed.

But it is hoped that our lawmakers will think twice before endowing themselves with diplomas,

and in effect passing professional judgment in a way that may eventually prove to be a verdict in favor of the spread of smallpox.

Think it over, gentlemen, and weigh carefully what the real medical authorities who have made a study and not a trade of their profession have to say.—*The Milwaukee Sentinel.*

THE JOURNAL CLINIC

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REPORT OF A CASE OF GLIOMA OF THE BRAIN DEMONSTRATING THE NECESSITY OF A COMPLETE HISTORY AS ESSENTIAL TO CORRECT DIAGNOSIS.*

BY ANDREW I. ROSENBERGER, M. D.,

MILWAUKEE.

It is practically axiomatic that the first requisite to correct diagnosis in any illness is a thorough and detailed history. Altogether too often, failures in diagnosis arise because of the carelessness or hurry on the part of the physician in taking a careful history, and usually because the early symptoms are not fully appreciated or noted by the friends and relatives until the patient is dead. Again, careful interrogation into the patient's mental or physical states, even from close associates, frequently fails to reveal alterations of long standing.

The case No. 1453, male, white, married, aged 48 years, salesman by occupation, entered The Riverside Sanitarium, March 4th, 1921, with, as may be noted below, the following meagre history:

Family History.

His father and mother are living and well. There was no history of nervous or mental trouble.

Personal History.

In 1898 while he was with the American Army in the Phillipines, he developed a chronic enteritis which was not entirely cured until twelve years later. He had been a moderate whiskey and beer drinker since twenty years of age, but never to the stage of intoxication. He denied venereal infection at any time.

About four or five weeks ago he showed an increased appetite for alcohol and began to complain of general weakness, more or less constant frontal headaches and loss of appetite. He showed a loss of ambition and appeared slow and inaccurate and without normal judgment. He began to neglect his work; he might work three or four hours a day and then come home and spend the rest of the day sitting quietly in apparent deep thought. About two weeks ago he stopped work altogether. Since about February 1st, 1921, a slow, unsteady, staggering gait with two or three attacks of vertigo was noticed. His chief complaints were a mild constant frontal headache, general weakness and drowsiness.

General Examination.

Physical examination showed a well developed and well nourished man upon gross inspection. The skin was warm and dry. The pupils were slightly dilated but reacted well to light, and accommodated normally to distance. There was an external strabismus of the right eye. After several requests, a coated tongue was protruded without any signs of deviation or tremor. A slight lingual ataxia was noted. Gross tremors of the outstretched fingers were present. He grasped well with both hands, but when objects were placed in the hands they were held loosely, which he only relinquished after several requests. When asked to write a sentence it was done correctly, without tremors, but slowly and with hesitation. The abdominal reflexes were absent. The knee, achilles, and plantar jerks were equally present and slightly exaggerated. There was no Oppenheim, no Babinski, no Gordon, nor ankle clonus. A marked Romberg was noted and the gait was somewhat ataxic with a slight tendency to fall backwards. The heart and lungs were apparently normal and no general adenopathy was noted. The abdomen was scaphoid in shape and no masses nor areas of tenderness were discovered. The temperature was normal, and the pulse was 86, regular and of good quality. The blood pressure was 140 systolic, and 80 diastolic. The blood, urine, and blood Wassermann were negative.

The mental examination showed general indifference and inability to concentrate. There was a marked amnesia for recent events. He seemed ordinarily to grasp what was asked him, and would answer relevantly, but at other times answered irrelevantly or failed to answer at all. In conversation he exhibited a striking lack of initiative, and would ordinarily give monosyllabic replies. At times he appeared to exhibit a certain loquacity conjoined with a tendency to confabulation, as for example, upon one occasion when he expressed the desire to go to a near-by town and get ten thousand bushels of strawberries and bring them to Milwaukee. Again, he wanted to give all his money away, and once he said he wanted to build several garages for the many machines he had, while as a matter of fact, he had none at all.

Hospital History of Progress of the Illness.

On March 10th, 1921, six days after admission to the Sanitarium, the patient appeared almost lethargic. He lay in bed on his left side with his chin on his chest and with his legs flexed on the abdomen. He could be easily aroused, but would shortly fall off into a

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*Read before the Milwaukee Medical Society, April 12th, 1921.

stuporous condition again. His chief symptoms at this time were loss of appetite, marked general weakness, drowsiness, and constant frontal headaches. The pulse was 54, regular and bounding. There was no definite stiffness of the neck and no Kernig. A lumbar puncture was made by Dr. Wm. H. Thalhimer, and it was thought that the spinal fluid was under some pressure. A blood culture and blood sugar test was made. The culture proved negative and the blood sugar was .158. The spinal fluid report showed a negative Wassermann and a cell count of 5 cells per cubic millimeter. The Noguchi and Ross Jones were positive. Lange's Gold Sol test showed a curve reading 2333321000.

On March 11th, 1921, the mental condition of the patient showed definite confusion and disorientation. The drowsiness was more marked. There was a slight stiffness of the neck but no Kernig. The pupils were less dilated but reacted normally. The external strabismus on the right was less marked.

On March 13th, 1921, an examination of the fundus was made by Dr. G. E. Seaman. His report showed a hyperaemia of the vessels of the discs, with venous engorgement more marked on the right and the nasal side of the left. The abnormal reflexes were absent, and the knee and achilles were equally present and slightly exaggerated. A double Babinski, double Oppenheim, double ankle clonus were however present. The pulse was 48, regular and bounding. The respirations were 20, regular and sterterous. The blood pressure was 140 systolic and 80 diastolic.

On March 14th, 1921, the patient went into a state of coma about 9 A. M. Gross generalized tremors of the arms and legs were noted, and at one time over a period of about 5 minutes there appeared marked tonic and clonic contractions of the right leg. The pulse, respirations and blood pressure remained unaltered. The pupils were widely dilated, equal in size, but no longer reacted to light. The double ankle clonus was absent. On the afternoon of this date the patient became gradually weaker, blood pressure falling and temperature rising from normal to 104.4 and pulse from 54 to 114. He died at 10:30 P. M. of this day.

Prior to his death and with the history which was furnished us, while it was possible to *guess* at a diagnosis of cerebral neoplasm, no certain diagnosis could be made at all; and as a matter of fact, we considered the possibility of brain tumor, epidemic encephalitis, paresis, and an alcoholic psychosis—keep in mind the fact that the patient was under observation only ten days.

On March 15th, 1921, about 12 hours after his death. a post-mortem examination was made by Dr. Wm. H. Thalhimer. His report is as follows: "Body of a fairly well nourished and middle aged man showed marked rigor mortis and post-mortem discoloration; no marks upon the surface of the body.

Brain.

The blood vessels of the pia arachnoid are quite markedly congested. The pia arachnoid is otherwise normal. The region of the right frontal lobe appears much softer than the left frontal lobe. On section, situated in the right frontal lobe, from a region just anterior from the level of the optic chiasm, which corresponds to a region just posterior to the most anterior portion of the temporal lobe, there is in the right frontal lobe, extending from the midline, 5 cm. to the right, a firm tumor which extends to within 3 cm. of the most anterior portion of the frontal lobe. The most posterior portion of this tumor seems to project into the lateral ventricle, and the later ventricle cannot be identified as far forward on the right side as it can on the left. The tumor is very firm and stands out above the surrounding cut surface of the brain, is very cellular in appearance, grayish cream colored, and also yellowish in places, and throughout there are small hemorrhages. The tumor appears firmer than most gliomata, and is about 6 em. in diameter. The right half of the hemisphere in the region of the tumor is considerably larger than the left half and encroaches upon the left half. Section of the brain elsewhere shows moderate congestion of the blood vessels but no other abnormality. The entire ventricular system however is slightly distended.

Diagnosis.

Glioma of right frontal lobe of brain.

Miscroscopical.

A number of sections from different portions of the tumor are made up of a large cell tumor tissue, characteristic of a large cell glioma. There are also scattered throughout the tumor numerous blood vessels filled with thrombi, also areas of coagulation necrosis and hemorrhage."

Retrospective Observations.

It may be stated at this time, that no really valuable history was obtained until several days after the autopsy. Only after careful inquiry was it then discovered that there were definite symptoms during the past eighteen months of the patient's life, which were barely noticed at the time or were not appraised then at their true value. His wife states that for the last few years the family has spent several months every summer camping in the country. In July and August of 1920, while on one of these outings, instead of entering with pleasure into outdoor sports as before, he would sit alone for hours complaining of loss of appetite and *frontal headaches*. These headaches were at times quite severe, of three to four hours duration, and appearing as frequently as two or three times a week. During this summer he had four or five attacks of *vomiting* which had no time relation to the taking of food nor the appearance of the headaches.

In December, 1920, he became apparently very *forgetful*, frequently neglecting to do what was asked of him. At this time a growing *mental enfeeblement* began to appear. As illustrating the growing childishness of the patient, the wife states that upon one occasion during this month when entertaining friends in

his home, he dressed in old army trousers, socks of different colors, old shoes, an old shirt, and a silk hat, and marched up and down the room before the assembled guests. He made no explanation for this behavior. Sometimes at night he would prepare to go on the road, but in the morning would appear to have forgotten all about his plans. When his wife would question him, he would say, "Yes, I am going," and then would appear to forget the matter altogether. Oftentimes, when his wife brought his breakfast to his bed about 10 o'clock in the morning, she had to arouse him and he would say, "Yes, I will eat," but in a few minutes he would be fast asleep again. One evening, in the latter part of February of this year, while visiting friends, he rose eight or nine times to get his hat to go home. As further illustrating the growing mental defect, his wife states that it became necessary for her to deal the cards for him during their card games, and that he appeared to be slow and inaccurate. From January to March, 1921, he had *attacks of vomiting* every three or four days, never severe, but usually as it was thought, brought on by physical or mental exertion.

Comment.

My only purpose in presenting this case is to emphasize the value and necessity of a complete history as essential to diagnosis. It is quite probable that if a complete history of this patient's condition had been available months ago, a diagnosis of brain tumor might have been made and operative procedure could possibly have saved his life. But, considering the location of the tumor, located in a *silent area of the brain*, and the type of tumor that was found at autopsy, it seems rather improbable that operative interference could have resulted in a favorable outcome at the time the patient came under our observation.

CASE OF PRIMARY SARCOMA OF THE LUNG.

BY DR. LOUIS F. JERMAIN, M. D.

MILWAUKEE.

Mr. F., age 29, male, single, metal polisher, was referred to our office on December 13, 1920.

He complained of pain in the chest, some temperature, considerable cough and bloody expectoration. His family history was negative. He had had no serious illness, his habits were good and he denied venereal disease.

Two years ago he sustained a severe crushing injury to his chest in an automobile accident, necessitating hospital confinement for several weeks. Recovery therefrom however seemed complete and he resumed his work as a metal polisher.

For the last four weeks he has suffered with a great deal of pain in the right chest, some cough and has had two very severe hemorrhages from the lungs, the last one four days prior to his visit to the office. Temperature has been normal for several days.

Physical Examination: Patient is well nourished but decidedly anemic. Examination of lungs shows marked impairment of resonance in the right lower, particularly in front; breath sounds over this area were very much diminished, slightly tubular and there were present a few subcrepitant rales. Physical examination otherwise negative.

Stereoscopic roentgenogram showed definite shadow in the right lung which seemed to spring from lung hilus and extend outward and downward. Sputum was definitely bloody and repeated examination failed to reveal anything that aided us in any way in the differential diagnosis.

One week later patient, while on his way to the office, had a violent pulmonary hemorrhage and was removed to St. Joseph's Hospital where he remained under observation until his death. While at the hospital a number of severe hemorrhages occurred and there was constantly expectoration of the characteristic raspberry jelly-like material. Examination after entrance to the hospital showed considerable bulging of the chest in the region of the right lung hilus, the area of dulness had markedly increased and there was more pain and tenderness than upon first examination. A second Roentgen examination showed very marked increases in size of shadow.

Blood count: Red blood cells 2,400,000; white blood cells, 31,000; hemoglobin. 65%. Differential count: Polymorphonuclears, 76%; large lymphocytes, 8%; small lymphocytes, 12%; transitionals, 3%, and eosinophiles, 1%.

A provisional diagnosis of primary lymphosarcoma of the lung was made and patient placed under X-ray treatment. Improvement from that time on seemed to be marked, pain and tenderness gradually subsided and bulging diminished quite perceptibly. There were no more severe hemorrhages, but there was constant expectoration of the characteristic raspberry jelly sputum. At the end of three weeks the patient was able to sit up daily, his blood count had practically become normal, except for slight reduction in the hemoglobin and red blood cells and he was planning to leave the hospital when he suddenly had a violent pulmonary hemorrhage and died from loss of blood in a few minutes.

Post-mortem examination conducted by Dr. Tharinger revealed primary small round cell sarcoma of the lung. The center of the tumor mass was broken down and the cavity thus formed was filled with blood.

DISCUSSION.

Primary sarcoma of the lung is the most infrequent of malignant diseases of the lung. Of all varieties of sarcoma of the lung the great majority are lymphosarcomas, originating in the mediastinal lymph glands and the clinical picture is that of mediastinal tumor. Primary small round cell sarcoma is extremely rare. An interesting question is the relation, if any, of the severe crushing injury to the patient's chest to the subsequent development of this neoplasm.

OPEN SAFETY PINS IN THE STOMACH AND INTESTINE.

BY H. O. CASWELL, M. D. & P. J. MAJERUS, M. D.,

FORT ATKINSON, WIS.

Foreign bodies entering the stomach and then the intestine usually continue their course and pass without difficulty. If the body contains a

Fig. 1.

point which is in some way protected as by hard stool or by some device on it for the purpose, little anxiety may be entertained. Should the point, as in the case of an open safety pin, be unprotected during its passage through the pylorus and the intestinal tract, necessity for interference may present itself.

A case recently coming under our observation at the Fort Atkinson General Hospital was of this nature: An open safety pin entered the esophagus during the act of swallowing, passed into the stomach, then through the pylorus and on into the intestines, there completing its course point down until within a few inches of the rectum when it reversed its position and was removed from the anus by slight traction.

The passage of this open safety pin was accomplished in face of the fact that the child was suffering from a loose stool incident to teething.

In a most exhaustive search of literature upon this condition but one case can be found of like character. This case was reported at the Mayo clinic.

In the American Medical Journal, Feb. 26, 1921, two cases of open safety pins entering the stomach were reported by Chevalier Jackson, M. D., Philadelphia, both of which were regurgitated into the esophagus and removed by esophagoscopy although they mention the fact of having had cases of open safety pins passing successfully through the stomach and intestinal tract without interference and no doubt many cases of this nature have occurred.

Case 1.

The passage of an open safety pin through the stomach and intestines, point down, until within a few inches of the rectum and then passing out, accomplished during a period of loose stool incident to teething.

April 28, 1921.

Boy, age 12 months, was playing with two safety pins and the mother observing that the child was somewhat embarrassed by a sudden cough, became suspicious and upon investigation found but one pin. Dr. H. O.

Fig. 2.

Caswell, the family physician, was called and advised a roentgenogram as there was some question as to the actual swallowing of the pin.

The child was brought to the hospital apparently in a normal condition and a roentgenogram taken within two hours after the attack of coughing which revealed the pin as shown in plate No. 1. A daily X-ray examination was advised and made. Upon the evening of April 28th, another picture was taken with the result in Plate No. 2. Upon April 29th, at 9 A. M., another picture was made with the result shown in plate No. 3. Upon the morning of April 30th, the child was brought to the hospital suffering with slight rectal irritation. Upon examination the back of the pin was pro-

Fig. 3.

truding from the anus, having reversed its position and was removed by slight traction.

The interesting features of this case are, viz: 1st. The fact that the open safety pin completed its course point down until near the anus and then reversed its position and passed out with but little assistance, and 2nd, that at the time of its sojourn in the intestinal tract it was unprotected because of the fact that the child was suffering from a loose stool.

A feature in this case was the absence of discomfort at any time during this process until the pin had reached the anus when uneasiness and some pain was apparent.

UNIVERSITY OF WISCONSIN MEDICAL SOCIETY MAY MEETING.

CHRONIC DISEASES OF THE HIP JOINT.

BY FREDERICK J. GAENSLEN, M. D.,

MILWAUKEE.

The commonest diseases of the hip joint are osteoarthritis and tuberculosis. Less common but peculiarly involving the hip joint are Perthe's Disease and coxa vara. While the hip joint is the most inaccessible, its involvement is nevertheless comparatively easy of diagnosis in 90% of cases.

Dr. Gaenslen took up the question of the routine examination of such cases applying the first rule, that of stripping the patients of clothing, and then taking up the question of gait, posture, contour, and clumsiness in handling themselves. Palpation determines muscular condition and changes in temperature. Mensuration shows atrophy of the thigh or calf muscles and lengthening or shortening of the limb. Special lines are denoted by names as Bryant's and Nelaton's. The range of motion should be carefully observed as a routine in diagnosis and prognosis. He emphasized the importance of approaching the patient by an examination of the sound side first. In the hip joint there are six motions, flexion, extension, abduction, adduction, internal and external rotation. The methods for determining these ranges of motion were outlined.

Tuberculosis of the hip. It is a chronic monarthritis in children typified by pain, limp, and night cries. This symptom complex is due to tuberculosis in 90% of cases. The night cries are due to a relaxation of the guarding muscles in sleep. Tuberculin is occasionally of value in diagnosis and the X-ray is of prime importance. Bone is fluffy and its outlines indistinct. Except in the very late cases there is no bony proliferation. Dr. Gaenslen took up the question of the differential diagnosis. Rotation limitation in tuberculosis of the hip practically rules out lumbar spine disease or sacroiliac tuberculosis. In the latter case lateral compression of the iliac crests by its spreading influence on the sacroiliac joint causes local and referred pain. As to treatment, traction gives early relief of the night cries and is applied through ordinary Buck's apparatus supplemented by elevation of the foot of the bed. Plaster cast is the next step and after six months of plaster cast, if progress has been satisfactory, braces may be applied. The ordinary case in a child is under treatment for about two years. Of course there are complicating factors in abscesses and sinuses; but here a clear cut rule is applicable, namely, aspirate all tuberculous abscesses rather than evacuate by incision since secondary infections after incision are inevitable.

If improperly treated there is marked deformity through drawing up of the knee and shortening of the

leg through a slipping out of the head of the femur from the acetabulum to assume a superior position above the acetabulum. The leg is furthermore held in adduction. Treatment is only concluded and a cure established when after removal of the braces temperature and measurements of extremities prove constant.

Osteoarthritis. Occurs in adults past middle life. Most commonly and primarily shows symptoms like sciatica by reason of referred pain along the obturator nerve. It is insidious in its progress, and is aggravated by movement and relieved by rest. There is a history of morning limbering up of a stiff limb and then a freedom from pain until its recurrence on tiring later in the day. The limitation of motion is principally in abduction on account of the position of the bony deposits about the lips of the acetabulum. Rotation and flexion are less limited. There may be some changes in the joints of the fingers. These cases do not show local elevation of temperature nor do they go on to suppuration. The greater trochanter may feel larger but there is no bogginess. Treatment is notoriously unsatisfactory. Fixation or a special apparatus permitting flexion without abduction offers the best outlook.

Perthe's Disease. Occurs between the ages of 5 and 10 years. It is a splitting of the femoral epiphysis with an increased density rather than rarefaction. Its cause is unknown and the pain much milder than in tuberculosis. It is fortunately a self-limiting disease, lasting but a year or two. Limitation of motion in abduction appears in the early stages. There are no other joints similarly affected.

Tabes. Tabetic involvement of the hip joint is rare. Charcot's flail joints characteristicly give no pain in spite of their proliferative changes. Hypermotility and laxness of ligaments and capsules are characteristic.

Syphilitic epiphysitis. Comes on in paroxysms, that is, with a tendency to recurrence where there is no treatment. Sleep is disturbed and the pain is worse at night.

Coxa vara was next discussed in relation to its etiologic types, discussing the rachitic, traumatic and adolescent types. In the latter case a limp develops as the first symptom.

Congenital Dislocation. May give rise to a waddling gait if bilateral.

Dr. Gaenslen's instructive talk was illustrated by a number of slides. This paper was discussed by Drs. Loevenhart, James Jackson, and Middleton.

SPLENECTOMY FOR CONGENITAL HEMOLYTIC JAUNDICE.

BY EDMUND H. MENSING, M. D., & MALCOLM F. ROGERS, M. D.,

MILWAUKEE.

History: J. E. Age 11. Male. Admitted to Columbia Hospital November 17, 1920. Ever since patient was 1½ years of age, parents noticed that he was extremely pale and that his skin was of a light lemon tint. He has had a few attacks of more pronounced jaundice associated with weakness, fever, loss of appetite and vomiting. No history of itching of skin. No clay colored or tarry stools. Patient has occasionally complained of stomach ache, pain being located sometimes below right costal margin and sometimes in epigastric region. Ever since infancy, patient has received tonic treatment, especially the different forms of iron.

Past Illnesses: Tonsils and adenoids removed in 1910. Two years ago, had a skin eruption on both legs consisting principally of bullae lasting about two months. Patient had measles four years ago.

Past History: Patient weighed fourteen pounds at birth. No instruments were used. Breast fed for two months following which he was fed on modified cow's milk.

Family History: Parents living and well. Patient is the only child. No history of jaundice in parents or relatives.

Physical Examination: Shows a poorly nourished youth; icterus quite pronounced. Excepting for an enlarged spleen, examination was negative. Spleen extends to mid line and downward 3 cm. below umbilicus. It has a sharp, well defined edge.

Laboratory Findings: *Urine.* Negative. (No bile, urobilin or blood found in the urine.)

Blood Count: W. B. C. 13,100, R. B. C. 2,190,000, H. B. 38%.

Differential Count: (Three hundred cells counted.) Polynorph. Neutro., 53.33; S. L., 24.33; L/L, 10.0; Polymorph. Eosino. 1.0; Trans., 7.33; Basophiles, 1.0; Basophilic Myelocytes, 3.0; Nucleated Reds, 12.0; Marked Anisocytosis, Poikilocytosis, Polychromatophilia, and Basophilic Stippling.

Color Index: One plus.

Coagulation Time: One and three-quarters.

Wassermann: Negative.

Fragility Test: Initial Haemolysis—.575 (normally .450); complete Haemolysis:—.425 (normally .375).

Stool Examination: Negative.

Schneider Test for Duodenal Content: Could not be made because of inability to pass tube.

Treatment: On November 23rd, 250 cc. of his mother's blood were injected by the Citrate Method. Following this transfusion, the hemoglobin rose from 38% to 52% and the red count rose from 2,190,000 to 3,170,000.

On November 29th, patient received another transfusion by the Citrate Method, 500 cc. injected. Immediately following second transfusion, patient's Hb. rose to 78% and the red count to 4,350,000.

Splenectomy was performed by Dr. Mensing on the 3rd of December. The spleen was removed with little difficulty, and the boy made an uneventful recovery. Weight of spleen was 500 grams when emptied of blood.

Miscroscopic Examination of spleen as reported by Dr. Thalheimer showed the following:

The splenic pulp is prominent, as are the blood sinuses which are in general widely open and definitely farther apart than normal. The intervening spaces are

occupied by an excessive amount of splenic pulp. The splenic pulp seems definitely made up of a considerable excess of tissue which consists of a connective tissue type of cell somewhat beyond the fibro-blast stage. There are only a few scattered leucocytes in this pulp and these are mainly mononuclears, although in various high power fields as many as 2 or 3 polymorphonuclear eosinophiles are found. The endothelium of the blood sinuses is normal. The malpighian corpuscles are somewhat fewer than normal in number, are rather small and loosely made up, containing rather fewer than the normal number of mononuclear cells. The reticulum, therefore, is considerably more prominent than normal. The central blood vessels of the malpighian corpuscles show a slight thickening and hyalin degeneration of their walls.

Patient continued to improve following the splenectomy and jaundice entirely disappeared. In less than two months following splenectomy, boy returned to school and to all intents and purposes was clinically cured.

Blood examination made four months after splenectomy showed: Hb.—90%. R. B. C. 4,750,000. W. B. C.—18,400.

Differential—S. L.—15. L. L.—20.5. P. N.—52.5. Trans.—5. Eosino—7.

Fragility Test showed that the reds were still more fragile than the normal. Initial Haemolysis, 5.25. Complete Haemolysis, 4.

It is interesting to note that following the splenectomy, the white blood count remained high and that he had a moderate eosinophilia and that the fragility test still showed fragile red blood corpuscles. These are common findings following splenectomy for this condition.

RETINITIS OF DIABETES MELLITUS.

In the course of a statistical study of the clinical types of diabetes mellitus encountered in the Mayo Clinic, it was observed that retinal lesions had been found only in patients with the mild form of diabetes, usually associated with arteriosclerosis. This observation led to a more careful examination by H. P. Wagener and R. M. Wilder, Rochester, Minn. (Journal A. M. A., Feb. 19, 1921), of diabetic patients for retinal lesions. In about eighty cases of diabetes characterized by acute onset and progressively increased severity, the so-called diabetes gravis, no patient showed retinal changes. Retinitis occurred exclusively in diabetic patients with mild, easily controlled glycosuria in whom evidence of vascular disease was always present. At least twice the authors were able to make a diagnosis from the ophthalmoscopic findings alone in the temporary absence of sugar from the urine. They believe, therefore, that the retinitis of diabetes is the retinitis of cardio-vascular-renal disease, modified in appearance and in stage of occurrence, possibly by the metabolic disturbances associated with the diabetes.

PREVENTIVE MEDICINE

Edited by
W. D. STOVALL, Chairman
Section on Preventive Medicine, State Medical Society of Wisconsin

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OBSERVATIONS ON INDUSTRIAL HYGIENE AND SANITATION IN WISCONSIN.

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MADISON.

Formerly and within the recollection of many of us the activities of preventive medicine were directed wholly to the control of communicable diseases. At present, however, the field includes other preventable conditions as well, notably heart and kidney diseases, mental affections and even cancer. Fully as important as any of the maladies already referred to and equally as amenable to prevention and control are the diseases of occupation. Incidentally it may be said that the full significance of the pathological conditions resulting from conditions of employment is just coming to be adequately recognized.

In some states notable progress has already been made in removing or lessening industrial health hazards, appropriate action being preceded by careful investigation and study of the medical, social and economic questions involved. Wisconsin, equipped with much excellent industrial legislation, stands on the threshold of opportunity for improving industrial hygiene and minimizing the existence of occupational diseases. One of marked strides in this direction was made in 1919, when all injuries, including occupational diseases growing out of and incidental to the employment were made compensable just as though they were injuries resulting from the lack of mechanical safeguards. However, considering the fertility and extent of the field in Wisconsin, comparatively little has been done towards reducing or eliminating industrial health hazards.

It is the purpose of the present paper to indicate several of the more promising lines of activity in industrial hygiene and sanitation. Moreover, it is the desire to demonstrate, through a brief consideration of a relatively minor phase of the subject, how involved and yet interdependent are the various factors concerned. Industrial fatigue, for instance, may be cited as one of the most important

health hazards, since it is generally recognized as a frequent cause of occupational disability. Lest it be presumed that questions associated with the production of industrial fatigue are comparatively simple of solution the following causes of this condition may be cited.

1. Laborious work.
2. Long hours of work.
3. Piecework.
4. Speeding up.
5. Monotony.
6. Constant standing .
7. Constant strain.
8. Use of chairs and stools without backs.
9. Faulty posture.
10. Jarring processes.
11. Pressing or holding objects against the body.
12. Eyestrain.
13. Loud noises.
14. Irregular hours for sleep.
15. Absence of work variation or periods of rest or relaxation.

While the causes of fatigue are manifold the influence of long hours in producing the condition has maintained a justifiable popularity with investigators of the problem. Moreover, definite benefits frequently accrue to industrial employes as the result of scientific investigations of the fatigue problem from this angle. One of the first studies to be undertaken in the United States of fatigue in relation to the length of the working hours was that conducted in Wisconsin by the Public Health Service. This investigation was made in 1916 at the request of the Wisconsin Industrial Commission and had for its purpose the possible determination of the proper number of working hours for women in industry. Simultaneously with the fatigue studies there was carried on sanitary surveys of women-employing industrial establishments and also studies of the home environment of individual women workers. While the investigation applied solely to women workers it is believed that approximately the same general conditions apply to the employment of men and that the findings may apply to both sexes with certain reservations.

There are several useful methods of measuring fatigue among workers:

1. By recording and analyzing the output.
2. By recording and analyzing the power consumed by machinery, a recording ammeter being used.
3. By recording the amount and analyzing the character of spoiled work.
4. By analyzing the causes of accidents.
5. By studying the causes of absence from work.
6. By instituting certain laboratory tests.

Because of its ready application and the comparatively reliable results secured, the method chosen in the Wisconsin survey was that of recording hourly production. In brief, the plan was to observe groups of women workers varying in size from 5 to 15 persons each for periods of one month, recording each hour the amount of piece work completed or the amount of money earned by each person in the group. By employing 11 observers it was possible to study the output of 202 workers in 19 departments of 15 establishments. The processes under observation varied widely in character, including both hand and machine operations. Among the hand operations studied were candy dipping, leather pasting and several processes of incandescent lamp making. On the other hand, enameling and stamping, and the making of hosiery, knit goods, mackinaws and great coats, overalls, shirts, shoes and gloves were listed among the machine operations observed.

In addition to recording hourly production, an actual accurate record was kept of the preventable and non-preventable time losses of each operator, thereby affording explanations for under production. Concisely stated, preventable time losses are those which are largely voluntary and within the control of the operator. Gossiping, loitering, tardiness and early stopping of work may be cited as examples. Among the involuntary or non-preventable time losses may be mentioned lack of material, waits for material, broken machinery, and going for work. In analyzing the causes for under production these time losses must necessarily receive adequate consideration.

The results of the Wisconsin study were both interesting and instructive. Not only was it possible to collect valuable data upon which to base definite recommendations but it was also practicable to institute experiments with work days of varying lengths. In one instance an entire department working 9 hours a day was placed on an 8

hour basis. All of the operators immediately excelled their previous 9 hour records.

As a result of the fatigue studies in Wisconsin the Public Health Service concluded:

1. That signs of fatigue were observed among the women studied.
2. That there was no evidence of cumulative fatigue.
3. That the time losses in the 10 hour day were 14.2 per cent of the total available working time.
4. That the time losses were notably less in the 8 hour than in the 10 hour day.
5. That the women observed worked considerably below the pace it was possible to attain.
6. That time losses are protective, defensive or compensatory moves on the parts of the operators to ward off accumulations of fatigue. This control is, of course, exerted subconsciously.
7. That piece workers, in an efficiently managed factory (one in which time losses due to breaking down of machinery, waits for material, shortage of material and the like are eliminated) who eliminate their own time losses, can produce as much in 8 working hours as are ordinarily produced in 10 hours. It must be definitely understood that this conclusion applies exclusively to certain departments in certain industries and therefore should be considered suggestive only. Telephone operators and other highly specialized women workers operating under peculiar strain and tension cannot, for obvious reasons, be included in these findings.
8. With certain reservations an 8 hour working day is believed to constitute a notable health measure as well as a distinct economic advantage.

That industrial fatigue can be considerably reduced by a single action, namely, shortening of the work day, is obvious. Unfortunately, however, production may correspondingly be reduced unless supplemental measures are employed to improve the hygiene of the workers and the sanitation of the places of employment. Among industrial hygienists it is common knowledge that apparently trivial changes within a factory frequently increase production. Thus, a change in work plans so that employes no longer face the windows has resulted in a 25 per cent increase of efficiency. Improved natural and artificial illumination within factories is invariably followed by increased production. There are, therefore, numerous additional factors to be considered as exerting definite influence upon fatigue reduction. Among these may be mentioned:

1. The introduction of rest periods which provide rest, recreation, relaxation and an opportunity for moving about or engaging in simple exercise.
2. Introduction of variety into the work.
3. Adjustment of the speed of operators to the average.
4. Elimination of unnecessary motions, thereby securing the greatest effort with the least possible waste of time and energy.
5. Use of adjustable seats with backs and other features.
6. Provision for properly ventilated work places; especially avoiding excessive heat and humidity and keeping the air in motion.
7. Provision for proper illumination.
8. Exhaustion of deleterious fumes and dust at their source.
9. Serving in a sanitary manner abundant, cooled, safe and conveniently located water.
10. Provision for convenient, attractive and quiet rest rooms, especially for women.
11. Provision for lunch rooms.
12. Provision for clean, modern and well ventilated toilets.
13. Avoidance of overtime.
14. Improvement of sanitary conditions outside factories.
15. Improvement of the personal hygiene of the workers.

A word of caution may well be extended at this point to the investigator, whether employed exclusively in an industrial establishment, engaged in purely outside social work or engaged in research. The time spent by employes in their places of business ordinarily ranges between 25 and 50 per cent of the entire time at their disposal. The remainder of the time is spent in their own or

others homes, in transit to and from the work places, on the streets and in public places. Therefore, in considering the question of industrial hygiene and sanitation, extraneous as well as local working conditions must be given appropriate consideration. Unless this is done one is apt to fall into the error of ascribing all ills to which man is heir as being due to the working environment. Faulty home conditions and keeping of late hours may be cited as conditions which may result in fatigue which is sometimes unfairly charged to modern industry.

In presenting these sidelights on the subject of industrial fatigue as it is influenced by the length of the working day an attempt has been made to indicate the vastness of the field of industrial hygiene and sanitation. If a study of a single phase of this extensive problem can be carried on so advantageously surely there must be need for additional activity along relatively neglected lines. The need for work of this character is especially urgent in Wisconsin. How best to throw additional health safeguards around the industrial employe is no longer a theoretical matter. Successful methods of attack are well known and their mode of application clearly indicated. What is needed at the present time is a more effective means of discovering the persons and things most in need of protective measures. For this purpose the following suggestions are advanced:

1. Employers and employes must be stimulated to the necessity for providing health safe guards. Just as the compensation act provided the stimulus for devising and installing mechanical safe guards for accident prevention just so may a system of health insurance succeed in providing health protection for the worker. It is felt that a system whereby the employer, employe, local community, and state contribute definite amounts to the health insurance fund offers the proper incentive for increased hygienic and sanitary measures on the parts of all concerned, because as conditions are improved insurance premiums will be reduced.

2. Occupational disease clinics should be established in Wisconsin in order that obscure affections may be diagnosed promptly, treated appropriately and the necessary steps taken to remove the health hazards from the industrial establishments. Just as specially trained men are required for the early diagnosis of tuberculosis and other insidious maladies even more so are experts demanded for the detection of the less familiar and incipient occupational diseases. The first occupational disease clinic should be established in Milwaukee, preferably as an adjunct of the city health department or State Board of Health. As the results obtained in such a clinic justified its existence additional clinics should be placed in other parts of the State.

3. The division of industrial hygiene and sanitation in the Wisconsin Industrial Commission is not equipped for handling the occupational disease situation in Wisconsin. This division should be divorced from the safety department of the commission and give an increased personnel. A competent and experienced director should be selected. In addition there should be an industrial chemist, a physicist, an illuminating engineer, a ventilating engineer and an industrial physician attached to his staff as a minimum personnel. With such an organization it would be possible to forestall the occurrence of many obscure maladies which at present are erroneously ascribed to other than their real causes.

PURE WATER.

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CHEMICALLY PURE WATER.

Pure water, in a chemical sense, exists only as a laboratory curiosity. Distilled water often thought to be pure invariably contains carbon dioxide and small amounts of ammonia besides minute quantities of the constituents of which the container is made in case of glass and certain other kinds of containers. The processes through which distilled water must pass to yield up all its impurities and remain pure are too tedious and voluminous to discuss here.

NATURAL WATERS.

Natural waters may or may not be pure waters. We often think of rain as the purest form of water and indeed it is if it were possible to collect it before it becomes contaminated by earthy matter. It is truly a distilled water, volatilized by the warmth of the sun and condensed by the cooler portions of the atmosphere. Natural waters may

be classified as surface and ground waters. Rivers, cisterns, and lakes are examples of the former while wells and springs make up the latter. Every natural water contains in solution more or less soluble material, and quite frequently noticeable quantities of suspended matter. In rain water, the precursor of all natural waters, the material gathered consists of gases, floating dust, soot and smoke particles and any other material present in the atmosphere through which the water passes. Of this composite matter some goes into solution and some settles out and forms the sludge which gathers in our cisterns. The soluble matter together with the dissolved gases gives to rain water its distinctive taste. When the rain water once touches the earth many changes take place in the amount and character of the material in solution and suspension and it is at this point when the bacterial content first forces itself to our attention. The soil, streets, housetops, refuse, excrement, and in fact everything which the rain touches yield their quota of bacteria to the fallen water and contribute their part in its pollution. Of the water that falls, a part runs off to form our rivers and lakes and a part soaks into the soil and gives us our ground waters. The bacterial content of the small streams immediately after a hard shower may be as high as a million per cubic centimeter and it is needless to say that a portion of the rain which eventually makes up our well and spring water may have contained in a like manner as many as a million bacteria per cubic centimeter. Fortunate we are that only a very small part of the bacterial flora of the earth are in any sense harmful to man and for that reason primitive man was able to drink from the rivulet with impunity and not subject himself to the modern dangers of infection. If we trace the run-off water we find that as the velocity of the stream decreases so also does its bacterial content as well as does the quantity of suspended matter. When this water reaches a quiet body of water such as our lakes and the ocean it gives up nearly all of its content of bacteria and sediment. Many factors enter into the natural surface purification of water. Sedimentation, mineralization and sunlight are vital factors in the process. Of the other portion of the rain water which does not run off but soaks into the ground we have quite a different process of purification. Depending upon the surface conditions, the water flows downward through the earth's strata and is oxidized and filtered by this natural process. This strained and purified water contains soluble material extracted from the soil and varying number of bacteria depending upon the degree of purification obtained. The inorganic portion of the soluble matter extracted from the earth's strata during the downward percolation of this rain water makes up the mineral constituents of our ground waters. The quantity of mineral matter in waters varies very greatly and is in proportion to the solubility of the mineral matter encountered, the length of time in contact and the gaseous content of the rain water. For instance, ground waters derived from certain localities in the northern portion of the State show very little mineral matter, some even as low as 800 pounds per million gallons, while some ground waters derived from certain formations in the eastern portion show as much as four tons of mineral matter per million gallons of water.

The quantity of mineral matter in waters has not conclusively been shown to have any direct effect upon the health. But of course it is a well known fact that a change in the quantity of mineral matter may cause certain gastro intestinal disturbances. While some observers have tried to show a relationship between hard water and the occurrence of goitre, no direct proof is available to substantiate their claims and until this evidence is available we will have to consider this an open question.

From a bacterial standpoint one would naturally expect that waters purest and nearest free from bacteria would be those which had been filtered through the finest material and for the longest period of time. That is quite true, for many of our deep wells yield sterile waters. Both of these conditions have been met in the supplies derived from the Potsdam Sandstone. In this formation it has been estimated from the rate of flow and inclination of this formation that the water which is pumped in southern parts of Wisconsin fell about 1,000 years ago in the central part of the State. It must not be considered that all deep wells are sterile or safe for this is not the case. In the magnesium limestone areas of the State, our deep wells frequently pierce a stratum of rock and enter a cavern which is in fact an underground river under pressure. The water rises in the well and frequently overflows at the top of the well. While it is not a common occurrence yet sometimes these underground waters connect directly with certain

surface waters. Water, of course, so derived is unsafe and such a well is not suitable for a supply. In the case of a deep well supply it appears only necessary in the majority of cases to protect the point at which the supply is tapped. That is, the casing should be continuous through the upper strata to the formation from which the water is desired. In addition to this precaution, the surface opening of the casing must be well protected from surface washings, as well as downward seepage prevented around the outside of the casing into the well.

In shallow wells and many springs we have a larger problem to solve to insure a safe supply. We are all more or less familiar with the rise and fall of the water in our shallow wells concomitantly with the amount and rapidity of rainfall. This means that we derive our shallow well supply and many of our spring supplies from a nearby source. For shallow wells, therefore, it is necessary to carry out the precautions cited above and in addition to establish with certainty the fact that there is no source of pollution near at hand which may gain access to the well with the water which makes up the supply. There are many factors involved in the hydrology of a shallow well supply. The slope or hydraulic gradient toward or away from the well from a source of pollution may determine its fitness for a domestic supply. In considering the slope it is important that the slope be obtained from the height of water in the well in comparison to the elevation of the source of contamination. The fact must not be lost sight of that water percolating into the earth always seeks the lowest level and always carries with it some portion, more or less, of everything with which it comes in contact. A shallow well must always be located on an elevation higher than sources of contamination such as privies, vaults, drains, cesspools, and stock barns or poultry houses, and at a distance in general of not less than 100 feet, this distance varying with the amount of the pollution and the character of the soil and subsoil. For instance, if the well is dug or driven down to a stratum of rock and the cesspool likewise, a much greater distance must intervene as the underflow may follow the rock layer as a small underground stream and if the slope is favorable contamination may take place at a great distance from the cesspool.

Lakes and rivers may be utilized for water supplies and in general are quite satisfactory, but it must always be borne in mind, that, while many of these supplies fulfill the requirements for a potable water when tested chemically and bacteriologically, surface waters of any locality are always exposed to pollution. The washings from the excreta of a dwelling in which there is a single case of typhoid may cause an epidemic of this disease in a community which takes its supply without purification from the stream receiving these washings. A well known example of this source of pollution occurred at Plymouth, Pa. At this city the supply was obtained from a mountain brook, but this brook just happened to be polluted by the excreta from one typhoid case. In this city there were 1104 cases and 114 deaths from typhoid fever within a period of a few weeks, out of a population of 8,000. The epidemic was studied on the spot by competent sanitarians and physicians so that no doubt remained as to the nature of the disease nor as to the method of its introduction and spread. Surface supplies of whatever source, whether far removed from civilization or not, are potentially dangerous supplies unless the watershed is carefully guarded or unless proper purification measures are instituted. Many of the lakes of Wisconsin would appear to be ideal supplies for they are remote from civilization, but nevertheless they may be a potential factor in the spread of typhoid and other intestinal affections. In any case where sewage or washings from human excreta finds its way into a surface water, chlorination or other methods of sterilization should be instituted in order to obtain a safe supply.

The value of a pure water to a community considered from purely a financial standpoint as calculated from the loss of money due to death from typhoid as well as loss of time to those ill together with the individual outlay of money in combating the disease is worth all the cost involved in obtaining a satisfactory and safe supply. Whipple in his monograph, "The Value of Pure Water," has computed the loss to a community for every death due to typhoid fever to be $10,000. This includes the value of a human life, the expense of caring for the ten ill who do not die, and the loss in earning power during illness. He states that this is probably too low a figure but considering that it is near correct we may compute the cost of typhoid fever to a community by comparing the normal death rate from this disease to that obtaining in a given city. Suppose the normal typhoid death rate

for your class city is 15 per 100,000, and you have 45, then your loss per annum would be $300,000 or $3 per capita. If you used 100 gallons per capita per day your typhoid fever would be costing you $81 per million gallons of water pumped or in other words your city could afford to spend $81 per million gallons in purifying the water used.

Commercial firms and manufacturers are beginning to appreciate the value of a pure water supply to their enterprises and it has become one of the first questions which is asked when a location is sought. In cities where the typhoid death rate is above the average there is usually found a poor water supply and in general a laxity in city management. Wisconsin is literally flooded with sources of pure water and with the modern methods of development, purification and examination of public supplies there is no excuse for excessive morbidity and mortality from typhoid and other intestinal diseases traceable to drinking water.

ANTISYPHILITIC THERAPY.

A comparative study of some intensive methods was made by Louis Chargin, New York (Journal A. M. A., April 23, 1921). Patients with recent infections, and only such as presented the early cutaneous manifestations of the disease, and cases in which the Wassermann reaction had already become strongly positive (from +++ to++++) were chosen. The study included 106 cases. Various brands of arsphenamin were employed. The dosage employed in the less intensive plan varied with the age, weight and sex of the individual. The average dose in the case of female patients was approximately 0.35 gm. of arsphenamin. In patients of the male sex the average dose was a little more than 0.4 gm. In the cases treated according to the more intensive plan, the arsphenamin administered per dose averaged higher in both the male and female patients. The mercurial preparations employed were the insoluble mercuric salicylate and mercurial oil (gray oil) in doses up to 2 grains. It did not appear that either preparation showed an advantage over the other with respect to its influence on the Wassermann reaction.

Plans of treatment:

1. The daily arsphenamin treatment (essentially the Politzer method) consisted in the administration of a course of three full doses of arsphenamin given on three successive days, and was followed by a course of six mercury injections given a week apart. The arsphenamin course was as a rule fortified by the administration of three additional injections at the end of the mercury course and was given either on three successive days or a week apart.

2. Three or four arsphenamin injections were administered on alternate days followed by a course of six mercury injections, and this in turn by additional arsphenamin administrations, three, four or five in number, a week apart or on alternate days.

3. The chronic intermittent method (Neisser) included the use of arsphenamin and mercury, which were given alternately, from six to eight arsphenamin and from ten to twelve mercury injections constituting a course. The arsphenamin injections were administered from five days to a week apart, and mercury was given in the interval. Eighty per cent of the early syphilitic patients treated by the modern intensive methods became negative by the tenth week; 98 per cent by the sixteenth week, and 100 per cent by the twentieth week. As a general rule, the more recent the infection at the time intensive treatment is begun, the sooner the Wassermann reaction becomes negative. To this there are notable exceptions. Since the clinical and serologic results are practically the same by all methods described, and since the margin of safety is in favor of the less intensive plan, it would seem justifiable to conclude that the less intensive plan should be favored as the method of choice in the treatment of syphilis.

RELATION BETWEEN SPECIALIST AND PRACTITIONER.

Other things being equal, James B. Herrick, Chicago (Journal A. M. A., April 9, 1921) states, the best specialist is the one who develops from the general practitioner—assuming previous high-grade college degree, a service as an intern, a studious, progressive mental attitude during the years of practice. For a physician merely to announce that in the future he will limit his practice to a certain kind of disease does not suddenly transform him into a specialist. Exceptional knowledge or unusual technical skill are prerequisites. Many self-styled specialists do not possess these essentials. Without years of general training, the specialist fails to understand the problems that vex the family physician. He lacks breadth of vision. Sometimes, conscious of his limitations, yet desirous of being thorough and of escaping the charge of superficiality, he searches for causes and relations other than those directly associated with his own specialty; he strives to be broad visioned and up with the times. That this type of specialist is far from ideal is clear. What is needed is the analytic mind, the sane judgment of the wise man of experience. Knowledge comes, but wisdom lingers. Discussing the relation of practitioner and specialist, Herrick says that there is a place for the family adviser, and we must strive to make that position one of honor, dignity and remuneration. The problem will to a great extent solve itself by a process of evolution. In fact, in some communities there is the practitioner-group system. Not housed in one office, but living in the same small town the practitioners, while independent, tacitly recognize that Dr. A is better qualified to do surgery, Dr. B knows more about children, Dr. C has the roentgen-ray outfit, and Dr. D has unusual information about neurology. Each has his families, each cares and cares well for all

ordinary cases of sickness, each recognizes his own limitations and is free to call on his colleagues for help, or when necessary to advise the services of the specialist or groups of the city, or of the hospital in the larger town nearby. This is a retention of the family physician idea. The doctor does not lose his self-respect; he is at peace with his colleagues; he cooperates with the group of experts, and the best interests of the patient—the sensible ones who will take any advice—are conserved.

Herrick suggests that our medical curriculum may be modified and thus shorten the road to specialism. He predicts that the time is not far distant when many medical undergraduates will to a certain extent be allowed to specialize before they receive their diplomas. The medical school will have to make this possible. It is done in literary colleges and in technical schools. A few favored students in medical schools are able to do it. Why may not medical schools lay down certain fundamental requirements in anatomy, physiology, chemistry, pathology, general medicine, general surgery, general clinical diagnosis, etc., courses that teach general principles, which courses must be mastered by all? But at the end of a certain time, perhaps two years or three years, grant some choice of work. There will still be retained the main courses for those planning general practice; there will be other courses or another grouping of courses for those who wish to specialize. Instead of putting all students of medicine through the same mill and turning them out at the age, say of 27, with the stamp of general practitioners, why not allow or even compel undergraduates to do as is required in many general cultural courses in literary colleges, to major in some subject or group of subjects especially in his last two years. He would still be a qualified practitioner, but he would have more than a mere outline of each of the many subjects included in the curriculums of today. There is an inevitable and justifiable trend toward specialism in medicine. The creation of a class of approved specialists will serve to draw more sharply than ever the line between specialist and practitioner between which classes relations are already somewhat strained. It is necessary to proceed cautiously to be sure we do not set our standard for the specialist so high that we defeat our own purpose by shutting out many desirable men, that we do not create a type of superspecialist that will still further arouse the antagonism of the practitioner. In all our planning we must devote more time to a consideration of what should be done for the unfortunate practitioner. If he is doomed, what is to take his place? If he can be saved, how is his salvation to be wrought?

PERCUSSION NOTE IN BACK OF LATERAL POSITION.

A series of fifty patients were studied by Tasker Howard, Brooklyn (Journal A. M. A., April 30, 1921), and the variations in the percussion note over the back were noted with the patient lying first on one side and then on the other. It was found that: (1) There was almost invariably a well marked change in the percussion note over a zone of 2 to 4 inches in width lying next the bed on the dependent side. The percussion note over this zone was short and high pitched, and frequently had a musical quality. (2) In nineteen of the patients there was noted comparatively less resonance throughout the lower side, as described by Cabot and others. This is ascribed to compression of the lower side by the weight of the body. (3) The effect of the shift of the level of the diaphragm on the lower border of pulmonary resonance is much more apparent in the axilla than in the back, although a change of 1 or 2 cm. may often be made out by percussion in the scapular line. However, there often appears an area of relative dulness at the base on the dependent side which extends up to the level of the ninth or eighth rib. The roentgenograms suggest that this dulness is due to a thinning out of the pulmonary tissue by the dome of the diaphragm, which is crowded up on the lower side. The diaphragm is dragged away from the chest wall on the upper side so that a thicker layer of lung lies below the percussing finger over the base on this side, and a relatively more resonant note results over this area. Compression of the lower side of the chest by the weight of the body would also operate more effectively near the base of the lung, because at this point the chest bears more weight than does the upper part, which is more or less supported by the shoulder. (4) Of fifty patients examined, twenty-two showed an area of relatively diminished resonance on the upper side which shifted to the opposite side when the patient turned over. It was usually observed at about the level of the angle of the scapula, but it sometimes appeared nearer the base. It was not affected by the position of the upper arm. It could be shifted or obliterated, in some instances, by rolling the patient a little more forward or backward. The explanation is believed to lie in the fact that when a person lies on the side there tends to develop a scoliosis due to sagging downward of the spine. This results in a spreading of the ribs on the lower side giving rise to a relatively greater capacity and a tendency to hyperresonance on percussion. The tympanitic quality in the zone described by Vierordt is probably due to this factor.

We are not concerned so much with the practice of chiropractic or any other cult that may hold out to cure or alleviate human ills. What concerns us most is that the followers of these cults shall be compelled to receive such training and instruction as will enable them to recognize the limitations of their treatment in the light of our knowledge of etiology and pathology of disease. This, in order that a trusting public may not be imposed upon by having the true pathology go unrecognized by these practitioners and subsequent increased complications prevent a cure or relief that might otherwise have been accomplished. We must awaken a public realization that no individual is competent to diagnose or treat a given condition with but a ninety day education. This is the basis upon which information regarding these cults must be imparted to the public.

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ORGANIZED 1841

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SOCIETY PROCEEDINGS

BARRON-POLK-WASHBURN-SAWYER-BURNETT COUNTY

A meeting of the Barron P. W. S. B. County Medical Society was held at the summer cabin of Dr. L. J. Knapp on Cedar Lake, Tuesday, June 7. The attendance, including the ladies, was over forty. The following program was given: "Heart Conditions and Treatment," by Dr. Morrisey, St. Paul; "As You Will It," a five-minute talk by Dr. I. G. Babcock, Cumberland, and a paper by Dr. A. N. Nelson of Clear Lake. Launch rides about the lake were much enjoyed as was an elaborate picnic lunch served by a caterer from Rice Lake. Dr. and Mrs. Knapp were quite overcome when the resolution was passed by the guests, inviting themselves to remain at the cabin for two weeks.

D. L. Dawson, M. D., *Secretary.*

DANE COUNTY MEDICAL SOCIETY

The regular meeting of the Dane County Medical Society was held at the Hotel Kegonsa, Stoughton, Tuesday, June 14. Supper was served at 6:30 P. M., after which the following program was given: "A Consideration of the Basal Metabolic Rate in Surgical Diseases of the Thyroid," by Dr. Reginald Jackson, and a presentation of cases by Dr. G. R. Duer of Stoughton.

H. M. Carter, M. D., *Secretary.*

EAU CLAIRE COUNTY.

The regular monthly meeting of the Eau Claire County Medical Society was held Tuesday evening, May 31, at the Elks' Club, Eau Claire. Supper was served at 6:30 P. M., after which the following papers were read: "Some Observations on the Management of the Third Stage of Labor," by Dr. J. L. Rothrock, St. Paul; and "The Value of the Roentgen Method in the Examination of the Gastro Intestinal Tract," by Dr. R. G. Allison, Minneapolis.

E. P. Hayes, M. D., *Secretary.*

FOX RIVER VALLEY MEDICAL SOCIETY.

The thirty-third meeting of the Fox River Valley Medical Society held in Green Bay, June 23, was one of the biggest and most successful meetings ever held by the society. About 85 physicians attended the meeting held in the Elks' hall and the banquet in the evening at the Beaumont Hotel. Dr. F. G. Connell, Oshkosh, was elected president for the coming year; Dr. R. C. Buchanan, Green Bay, first vice-president; Dr. Edward Sawbridge, Stephenson, Mich., second vice-president; Dr. Robert L. Cowles, Green Bay, secretary-treasurer; and Dr. J. W. Boren, Marinette, censor. Among the papers read before the society was one by Dr. Verne C. Hunt of the Mayo Clinic on "Ulcer of the Stomach and Duodenum."

JEFFERSON COUNTY.

The first 1921 meeting of the Jefferson County Medical Society was held at the Jefferson County Tuberculosis Sanatorium, Friday, May 20th. A business meeting with the Board was held after which several case reports were made. Luncheon was served at six o'clock. The following resolution was adopted unanimously by the society:

"Any resident member of the Jefferson County Medical Society who has failed to attend at least two of the regular meetings of the Society, during the period of one year, must present his excuse to the Society prior to the convening of the annual meeting. At each annual meeting, the Board of Censors shall review the excuses presented. In the event the Board of Censors shall deem the excuses illegitimate, the offending members shall be disqualified to membership in the Society for a period of one year. Failure to present excuses at the above specified time shall be considered admitted ineligibility effective at the time of the annual meeting. It shall be the duty of the Board of Censors to review at the annual meeting the secretary's record of roll call for the past year and report to the secretary the ineligibiles for the coming year."

Eighteen members of the society were present at the meeting.

H. P. Bowen, M. D., *Secretary.*

MONROE COUNTY.

The members of the Monroe County Medical Society and their families enjoyed the annual basket picnic at Floro Dell Resort, Tomah, June 22, as guests of Dr. Hugh Johnson of Tomah. Fourteen families were present and athletics of a varied nature were enjoyed by all.

L. H. Prince, M. D., *Secretary.*

RACINE COUNTY

The regular meeting of the Racine County Medical Society was held at St. Mary's Hospital, May 26th, at 4 P. M., Racine. Dr. Curtis A. Evans of Milwaukee read an excellent and instructive paper on "Unlocalized Intracranial Injuries, Indications for Surgical Treatment." Discussion was liberal.

It was the expressed desire of the Society to have the paper published in the Wisconsin Medical Journal. The attendance was fine.

Susan Jones, M. D., *Secretary.*

ROCK COUNTY

The regular meeting of the Rock County Medical Society was held in Beloit, Tuesday evening, May 31, at the Y. M. C. A. Dinner was served at 6:30 P. M., followed by an address by Dr. Bernard Santus, Chicago, on "New and Non-official Remedies."

ASSOCIATION NEWS

PROVISIONAL PROGRAM FOR CLINICS DURING STATE HOME COMING WEEK.

Monday Morning, Sept. 5th, 1921.

**County Hospital*, Wauwatosa.

Medical Ward Clinic, 9:00 to 11:00 A. M.

Milwaukee Hospital, 22nd, Cedar and State Streets.

Surgical Operative Clinic, 8:00 A. M. (Limited to 10).

Mt. Sinai Hospital, 12th and Cedar Streets.

**Muirdale Sanatorium*, Wauwatosa.

Tuberculosis Clinic and Demonstration, 10:00 to 12:00 A. M. Luncheon 1:00 P. M. (Not more than 20).

Trinity Hospital, 9th and Wells.

Medical and Surgical Clinics, 9:00 A. M.

Monday Afternoon, Sept. 5th, 1921.

Children's Hospital, 10th and Wells Streets.

Clinic at 4:00 P. M.

Tuesday Morning, Sept. 6th, 1921.

**County Hospital*, Wauwatosa.

Surgical Clinic, 8:30 A. M.

St. Joseph's Hospital, 4th Street and Reservoir Avenue.

Medical and Surgical Clinics, 9:00 A. M.

Milwaukee Hospital, 22nd, Cedar and State Streets.

Surgical Operative Clinic, 8:00 A. M. (Limited to 10).

Mt. Sinai Hospital, 12th and Cedar Streets.

Tuesday Afternoon, Sept. 6th, 1921.

Columbia Hospital, Hartford and Maryland Avenues. 3:00 P. M.

1. Demonstration of some of the newer Laboratory Diagnostic Methods.
2. Clinic at Curative Workshop. Demonstration of methods used in the Reclamation of the maimed and crippled by means of Occupation, Massage and supervised exercises.
3. Occupational Therapy methods for Hospital patients and exhibits of work.

Hotel Accommodations for Home-Coming Meeting.

Hotel	Location	No. of rooms	With bath	Without Bath	Doubles With Bath	Doubles Without Bath	
Astor	266 Juneau Av.	50	$3 to $3.50 per person		$3 to $3.50 per person		Rooms with Murphy beds accommodate 3 or 4 persons
Gilpatrick	223-5 Third St.	50	Shower $2.25 Tub $2,50, $3 and $4	$1.75 to $2	$4, $5, $6	$3 and $4	Rooms for 4: with shower, $7; with tub, $8; suite with bath, $10
Globe	221-3 Wisconsin	10	$2, $2.50, $3	$1.50	$3.50, $4, $4.50, $5	$3	
Juneau	229 Wisconsin	48			$6	$3, $4	Rooms with 2 double beds at $2 per person for 3 or 4 persons
Martin	201 Wisconsin		$2.50, $2.75, $3	$1.50, $2, $2.25	$3.50, $3.75 and $4	$2.50, $3 and $3.25	Double rooms, 2 beds and bath, $5 per day for 2 people
Medford	119 Third St.		$2.50, $2.75, $3	$1.50, $2, $2.25	$3.50, $3.75 and $4	$2.50, $3 and $3.25	Double rooms, 2 beds and bath, $5 per day for 2 people
Miller	175 Third St.	20			$5	$3.50	
Plankinton	W. Water and Sycamore	100	$3 to $6.00		$5.50 to $9		Make reservations direct with hotel
Pfister	Wisconsin and Jefferson		$3.50 and up	$2.50 and up	$4.50 and up	$3.50 and up	
Republican	Third and Cedar	100	$3 to $3.50	$1.75 to $2	$4 to $6	$3 to $4	
Wisconsin	172-80 Third St.	200		$2 and up	Shower $5 and $6 Tub $6 & $7 Twin beds $7 and $8	$4.00 and up	Suites with bath for 4, 5 or 6 guests, $3.00 per person

*Wells-Downer cars on Grand Avenue going west, leave Grand Avenue and East Water Street on the hour, and 20 and 40 minutes past. Ride to the end of the line. For Muirdale, same car, same ride. Bus will meet car to transport you to Muirdale.

MARSHFIELD MEETING OF THE WISCONSIN SURGICAL ASSOCIATION.

The seventh annual meeting of the Wisconsin Surgical Association was held at Marshfield, May 18th and 19th under the presidency of Dr. K. W. Doege. It was a success in every respect and surpassed any previous meeting in attendance as almost 200 physicians and surgeons registered from all the principal cities of the state. This meeting fully demonstrated the fact that these meetings can be held successfully in various localities and thus be of more benefit to the hospitals and surgeons at large.

Special mention must be made of the fact that at this meeting no operative work was done but there were six sections in which clinic demonstrations were going on simultaneously so that all branches of surgery and borderline cases were thoroughly covered. The individual members therefore had a chance of attending those sections which interested them most and had an opportunity of choosing from a large number of men those whom they wished to hear. All these demonstrative clinics were held at St. Joseph's Hospital and avoided the going from one hospital to another.

The Eye, Ear, Nose and Throat section was largely attended. Very free discussions occurred after every paper in this section and every one present was of the opinion that this section was of inestimable value to every surgeon who attended it.

The evening session of the first day was held at the Opera House, where the President, Dr. Willard Bartlett, of St. Louis, and Dr. D. B. Phemister, of Chicago, gave addresses on popular surgical topics. At this session the public were invited so that they might be better educated along the lines of more scientific medicine and thus be able to aid in the elimination of medical quackery from our state.

On the second evening a banquet was given in the armory followed by addresses by Dr. Horace M. Brown, of Milwaukee, Dr. Guy L. Hunner, of Baltimore, and Dr. Alfred A. Strauss, of Chicago.

This meeting was greatly improved by the presence of the following surgeons from other states who gave masterly addresses upon various surgical topics. They included the following:

Dr. Willard Bartlett, St. Louis, Missouri.
Dr. Alfred A. Strauss, Chicago, Ill.
Dr. D. B. Phemister, Chicago, Ill.
Dr. George F. Thompson, Chicago, Ill.
Dr. Harry S. Gradle, Chicago, Ill.
Dr. Hollis E. Potter, Chicago, Ill.
Dr. H. L. Pollock, Chicago, Ill.
Dr. Guy L. Hunner, Baltimore, Maryland.

The newly elected officers for the ensuing year were Dr. J. R. V. Lyman, Eau Claire, President, and Dr. F. J. Gaenslen, Milwaukee, Vice President.

V. A. Mason, *Acting Secretary.*

NEWS ITEMS AND PERSONALS

A large addition to St. Mary's Hospital, Wausau, is to be built during the summer, which will provide for a maternity hospital and nurses' training school.

The physicians and dentists of Tomahawk are cooperating in a health demonstration for rural districts in that vicinity. Health centers have been established in several districts and ninety-five children have been examined.

A hospital tag day held in Racine by the Florence Nightingale and St. Mary's Aid Societies, June 4, netted a sum of $1,778. The money is to be used to establish free beds in the two city hospitals.

Dr. Lucius W. Hipke, recently graduated from the Western Reserve Medical School, Cleveland, Ohio, who has been visiting his parents, Dr. and Mrs. G. A. Hipke, Milwaukee, returned to Cleveland July first to take up his duties as resident physician of the Charity Hospital there.

Dr. G. Windesheim was unanimously re-elected to the office of commissioner of public health of Kenosha at the meeting of the Board of Health held in June.

Only 64 pupils out of 386 examined at the vocational school, Green Bay, were found to be without physical defects, according to a report issued by the health center. A special visiting nurse will be appointed to take charge of the defective children.

Dr. W. D. Harvie, who formerly practiced at Oshkosh, has located in Fond du Lac.

About 18 per cent of the persons examined at the series of chest clinics held in Grant County by the Wisconsin Anti-Tuberculosis Association were found to have tuberculosis. Examinations were made at Boscobel, Muscoda and Platteville, 357 persons being examined and 61 pronounced tuberculous.

Dr. C. F. Harris, who has practiced in Chicago for many years, having been head of the medical department for the Western Electric Company there, has located in Bayfield.

Dr. J. B. Edwards, formerly of Milwaukee, has been appointed as resident physician of the Wisconsin Veterans' Home at Waupaca.

Doctors C. G. Dwight and F. A. Davis have purchased the Proudfit homestead property in Madison and will convert it into a medical and surgical clinic to be known as the Madison General Clinic.

The Milwaukee Association of Commerce is preparing to raise additional funds so that research work in ferreting out the germs of encephalitis lethargica and infantile paralysis may be continued. This work is under the direction of Dr. William Thalheimer of the Columbia Hospital, Milwaukee.

Dr. H. Driessel of Kewaskum has had his offices remodeled into an up-to-date operating room and has also had five rooms of his residence fitted up for patients. A trained nurse will be in attendance at all times and the rooms are available for use by any physicians in the community.

Riverview Hospital, Wisconsin Rapids, is making plans to conduct a drive for $20,000, the funds to be used to make up several large deficits and to conduct the hospital the coming year.

The medical class of Marquette University, 1916, held a reunion in Milwaukee, June 17 and 18. Thirty-two members of the class were present.

An addition to St. Elizabeth's Hospital, Appleton, to cost approximately $500,000, has been begun. The new building is to be 440 feet by 80 feet in size, six stories high.

Several changes in medical firms in Eau Claire have been made. Drs. H. F. Derge, J. V. R. Lyman and J. F. Robinson have announced the dissolution of their partnership, and Dr. Derge will be associated with Drs. E. L. Mason, E. P. Hayes and J. E. B. Ziegler in the Eau Claire Clinic. Dr. J. V. R. Lyman will be associated with Drs. J. F. Robinson and F. E. Kinsman.

Work has been started on a new brick heating plant and an addition to the Madison General Hospital, to cost about $100,750.

Dr. A. J. Pullen of North Fond du Lac left the last of June to make an extended tour of several European countries.

The American Medical Association Journal says: The medical corps of the navy is confronted by a discouraging situation. Approximately 600 vacancies have occurred, and to fill these vacancies during the last year only six medical officers have been appointed from civil life and only 100 from the reserve and temporary medical officers. This situation is due largely to the fact that private practice is more remunerative. Officers in the medical corps of the navy who believe that the right kind of material can be secured for the navy are hopeful that the department will take some steps to attract medical men, so as to influence in a favorable way the existing failure of medical men to enter the navy.

Dr. Eduard Miloslavich has arrived in Milwaukee from Vienna to assume the position of full-time Professor of Pathology and Bacteriology in Marquette School of Medicine. Dr. Miloslavich was born in Oakland, California, in 1884, but went to Europe in his early childhood. He received the degree of Doctor of Medicine from the University of Vienna in 1908, studied at the University of Naples under Professor Otto von Schronn in Pathological Anatomy and under Professor S. Smiraglia-Sconamiglio in Experimental Pathology. Beginning with the year 1907 he was teacher at the Institute of Pathological Anatomy under the direction of Professor Anton Weichselbaum, from 1910 to 1914 he was Assistant Prosector at the Military Hospital in Vienna and at the same time assisted in the teaching of pathological, anatomical and forensic medical courses at the Military Medical School. Since March, 1917, he was assistant professor of Pathological Anatomy at the University of Vienna and from 1918 to 1920 he was Director of Pathological Institute of the Vienna Military Hospitals. Dr. Miloslavich has published many of his researches in pathology, particularly pathological anatomy of the appendix, pathological anatomy of the adrenal bodies, the thymus, the liver and the colon. He has also been actively engaged in bacteriological and serological work, especially in the precipitin reaction of luetic sera and in the pathological changes and reactions of the cerebral spinal fluid in diseases of the nervous system. Professor Miloslavich has brought with him a very large collection of scientific material and pathologic specimens to be used for teaching purposes.

Miss Elizabeth Casey, for three years superintendent of nurses at Mercy Hospital, Oshkosh, resigned July first and has gone to her home at Ripon for an extended rest.

Dr. James S. Mills, formerly of Janesville, has accepted a position as senior house physician at the Cincinnati General Hospital.

Dr. F. S. Wiley, Fond du Lac, was re-elected a member of the executive board of the National Catholic Hospital Association at the convention of the organization held in St. Paul in June. Father C. B. Moulinier, Milwaukee, was re-elected as president of the association.

Dr. I. D. Steffen, Antigo, has been appointed as a member of the State Board of Health to succeed Dr. Charles Sutherland, Janesville, for a term ending in 1928.

Dr. D. J. Hayes has resumed practice at 1014 Majestic Building, Milwaukee. His work is limited to office practice and consultation in genito-urinary surgery and venereal diseases.

Dr. H. C. Ladewig has removed from Baraboo to Milwaukee and is now associated with his father, Dr. A. W. Ladewig.

Drs. Paul S. Epperson and Wellwood M. Nesbit have recently located in Madison and become associated with the Jackson Clinic. Dr. Epperson has charge of the X-ray laboratories and Dr. Nesbit of the ear, nose and throat department.

Dr. J. P. Koehler, head of the Milwaukee County dispensary, has been appointed state deputy health officer for Milwaukee County outside the city.

Dr. H. M. Brown, Milwaukee, has left for a trip abroad and expects to return some time in September.

Dr. Arthur J. Patek, Dr. Erwin R. Lamp, and Theo-

dore J. Werle, Milwaukee, took a 200-mile hike down the Kickapoo valley early in June, starting at Norwalk and ending at Prairie du Chien. The trip was made in eight days.

A 500-bed tuberculosis hospital, to cost $1,400,000, is to be erected by the Federal Government on the grounds of the Northwestern Soldiers' Home, Milwaukee, for the treatment of former service men.

DEATHS

Dr. Otto Westedt of Loganville, Wisconsin, died at his home June 9, 1921. Dr. Westedt was born in 1879 and graduated from the Milwaukee Medical College in 1908. He was a member of the Sauk County, Wisconsin State and American Medical Associations.

Dr. Thomas Burke of Wayside, Wisconsin, died June 11, 1921, after an illness of two months. Dr. Burke was born in Morrison, Wisconsin, in 1856. After graduating from the Oshkosh Normal School, he taught school for several years in Brown and Manitowoc counties and later in Watertown. He then took up the study of medicine and graduated from Rush Medical College in 1887, practicing at Wayside for over thirty years.

Dr. Herman H. Voss, Racine, died at his home, May 26. Dr. Voss was born in Collinghorst, Hanover, Germany, November 10, 1855. He graduated from the universities of Leipzig and Heidelberg and received a commission from the Netherlands government to act as government physician in the East, remaining in that service for five years. He came to the United States about 35 years ago and engaged in practice in Milwaukee, later going to the Ozark Mountains where he practiced for eight years. He located in Racine in 1916 and practiced there until the time of his death.

Dr. A. H. Little, Milwaukee, died on June 28 of tuberculosis, after a long illness.

MARRIAGES

Dr. W. E. Buckley, Red Granite, to Miss Etta Costello, Fond du Lac, June 25.

Dr. W. J. Hanley, Kenosha, to Miss Mary Frances Burns, Watertown, June 22.

Dr. Earl L. Baum, Milwaukee, to Miss Agnes Sundlie, Milwaukee, May 26.

24TH ANNUAL MEETING OF THE MEDICAL LIBRARY ASSOCIATION.

The 24th Annual Meeting of the Medical Library Association, whose membership includes all of the larger medical libraries of the country, and a large number of individual members, consisting of those interested in furthering medical library work, was held in Boston June 6, 7, 8, 1921. The business meetings of the Association were held in the Boston Medical Library. In addition to the address of the President the program contained the report of a committee on Standard Classification, and the system used in the Boston Medical Library, and this as explained by the Chairman, Mr. James F. Ballard, was adopted, as being the most practical solution for meeting the perplexing problems of classification. This was followed by a discussion on Reference Aids, which was opened by Mrs. Grace W. Myers, of the Treadwell Library of the Massachusetts General Hospital. An evening meeting, which was largely attended, was addressed by the President, Dr. John W. Farlow, of the Boston Medical Library. This was followed by an interesting paper, illustrated by lantern slides, by Dr. George S. Huntington, of New York City, entitled "Some historical facts concerning the catoptron of Johannes Remmelinus, and the superimposed anatomical plate during the early part of the 17th Century." Following this Dr. Malcolm Storer, of Boston, read a paper entitled "Interesting medical medals."

In addition to the regular program visits were made to the various libraries in Boston. In each case the members of the Association were shown over the buildings and the various points of interest were explained. Visits were made to the Harvard Medical School Library, Boston Public Library, Harvard College Library, Treadwell Library and the Boston Athenaeum Library. Of particular interest was an exhibit of rare medical items from the library of Dr. Edward C. Streeter, of Boston, spread in the exhibition room of the Boston Public Library. The exhibit was specifically epidemiological, the essential literature on fevers from Hippocrates to Lancisi, with a few sections such as Plague, Syphilis, Venesection superadded.

The permanent headquarters of the Medical Library Association are in the Medical and Chirurgical Faculty Building, at 1211 Cathedral Street, Baltimore, Maryland.

CHRONIC SYSTEMIC INFECTIONS AND THEIR SOURCES.

The increase of knowledge regarding the relation of acute and chronic local infections to more widespread and often disabling diseases, Ernest E. Irons, Chicago (Journal A. M. A., March 5, 1921), says has made possible the prevention of much suffering and has been the means of restoring to health many of those who seemed in previous years to be condemned to recurrent disability and even permanent invalidism. The dental profession has contributed largely to this end by introducing methods for the recognition and cure of infections about the teeth. While experience teaches that the removal of alveolar abscesses frees certain patients from recurrences of their arthritis or other metastatic lesions, and while it is fairly clear why such a result is often to be anticipated, it is not so evident why many other alveolar abscesses remain symptomless and, so far as can be determined, wholly unassociated with metastatic disease.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

Medical Electricity and Roentgen Rays with a Practical Chapter on Phototherapy. By Sinclair Tousey, M. D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. Third edition. Thoroughly Revised and Greatly Enlarged. Octavo of 1337 pages, 861 illustrations, 16 in colors. Philadelphia and London: W. B. Saunders Company, 1921. Cloth $10.00 net.

Massage and Therapeutic Exercise. By Mary McMillan, Chief Aide, Walter Reed Army Hospital, Washington, D. C., 1918; Supervisor of Aides in Physio-therapy, Medical Corps, U. S. A., Washington, D. C. 1919-1920. 12mo of 274 pages with 74 illustrations. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $2.25 net.

A Text Book of Pathology. By Alfred Stengel, M. D., Sc. D., Professor of Medicine, University of Pennsylvania, and Herbert Fox, M. D., Director of the Pepper Laboratory of Clinical Medicine, University of Pennsylvania. Seventh Edition, Reset. Octavo of 1111 pages, 509 illustrations, many in colors, 15 colored plates. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $8.50 net.

Radiant Energy and the Ophthalmic Lens. By Frederick Booth. Introduction by Whitefield Bowers. 226 pages, 230 illustrations. Philadelphia: P. Blakiston's Son & Co. Price, $2.25 net.

Disturbances of Instincts and Effects. (The Parapathic Diseases.) By Wilhelm Steckel, Wien. 482 pp. Berlin and Wien: Urban and Schwarzenburg. 1920.

Handbook of Clinical Hydro-, Balneo-, and Climato-Therapy. By Alois Strasser, Professor at Wien; Franz Kirsch, Dr. at Wien, and E. Sommer, Professor at Zürich. Part 2, pp. 209-911. 48 illustrations. Berlin and Wien: Urban and Schwarzenberg. 1920.

Tuberculosis and How to Combat It. A book for the Patient. By Francis M. Pottenger. 272 pp. St. Louis: C. V. Mosby Co. 1921. Price, $2.00.

Types of Mental Defectives. By Martin W. Barr, M. D., and E. F. Maloney, A. B. 30 plates containing 188 illustrations. 180 pp. Philadelphia: P. Blakiston's Son & Co. 1921. Price, $3.00.

The Principles of Immunology. By Howard T. Karsten, M. D., and Enrique E. Ecker, Ph. D. Illustrated. Philadelphia and London: J. B. Lippincott Co. 1921. 310 pp. Price, $5.00.

Gynecology. By Brook M. Anspach, M. D., Associate in Gynecology, University of Pa. 750 pp. 526 illustrations. Philadephia and London: J. B. Lippincott Co.

The Technique of Psycho-Analysis. By Smith Ely Jelliffe. 2nd Edition, revised and enlarged. Washington, D. C.: Nervous and Mental Disease Publishing Co. 170 pp. Paper. 1920.

Dermatology. By Walter James Highman, Chairman Section on Dermatology and Syphilology, A. M. A., Associate Professor of Dermatology, N. Y. Postgraduate Medical School and Hospital. First edition, 482 pp. 95 illustrations. New York: The MacMillan Co. 1921.

Surgery of the Upper Abdomen. By John B. Deaver, M. D., Sc. D., LL.D., Professor of Surgery, University of Pennsylvania, and Astley P. C. Ashhurst, A. B., M. D., Associate in Surgery in the University of Pennsylvania. 2nd edition. 9 colored plates and 198 other illustrations. Philadelphia: P. Blakiston's Son & Co. Price, $14.00 net.

Keen's Surgery. Vol. VIII. By Surgical Experts. Edited by W. W. Keen, M. D., LL. D., Hon. F. R. C. S., England and Edinburgh, Emeritus Prof. of the Principles of Surgery and Clinical Surgery, Jefferson Medical College, Philadelphia. Octavo of 960 pages, with 657 illustrations, 12 of them in colors. Philadelphia and London: W. B. Saunders Co. 1921. Price, Vol. VII and VIII and Desk Index Volume, Cloth, $25.00.

Principles of Hygiene: A Practical Manual for Students, Physicians, and Health Officers. By D. H. Bergey, M. D., Dr. P. H., Assistant Professor of Hygiene and Bacteriology, University of Pennsylvania. Seventh Edition, thoroughly revised. Octavo of 556 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1921. Cloth, $5.50 net.

The Principles of Therapeutics. By Oliver T. Osborne, M. D., Professor of Therapeutics, Department of Medicine, Yale University. Octavo of 881 pages. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $7.00 net.

A Primer for Diabetic Patients. A Brief Outline of the Principles of Diabetic Treatment, Sample Menus, Recipes and Food Tables. By Russell M. Wilder, M. D., May A. Foley, and Daisy Ellithorpe, Dietetians, The Mayo Clinic. 12mo of 76 pages. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $1.50 net.

Traumatic Surgery. By John J. Moorehead, B. S., M. D., F. A. C. S. Philadelphia and London: W. B. Saunders Co. 1920.

Mental Self-Help. By Edwin Ash, M. D. 119 pp. New York: The MacMillan Co. 1920.

The Adolescent Girl. A Study from the Psycho-Analytic Viewpoint. By Phyllis Blanchard, Ph. D., with a preface by Dr. G. Stanley Hall. New York: Moffat, Yard & Co. 242 pp. 1920.

The Psychology of Functional Neuroses. By H. L. Hollingworth, M. D., Associate Professor of Psychology, Columbia University. D. Appleton & Co., New York. 256 pp. 1920. Price, $2.00.

Psychology and Psychotherapy. By Wm. Brown. M. A., M. D., University of London. New York: Longmans, Green & Co. 196 pp. 1921.

Tuberculosis of Children. By Prof. Dr. Hans Much, University of Hamburg, Germany. Translated by Max Rothschild. New York: The MacMillan Co. 156 pp. 1921.

Dream Psychology. By Prof. Sigmund Freud, M. D. Translated by M. D. Eder. New York: The James McCann Co. 283 pp. 1920.

BOOK REVIEWS

Massage and Therapeutic Exercise. By Mary McMillan, Chief Aide, Walter Reed Army Hospital, Washington, D. C., 1918; Supervisor of Aides in Physiotherapy, M. C., U. S. A., Washington, D. C. 1919-1920. 12mo of 274 pages. 74 illustrations. W. B. Saunders Co., Philadelphia and London. 1921. Cloth, $2.25 net.

The author of this little work has had much experience in England and later as Chief Aide at the Walter Reed Army Hospital, Washington, D. C., and as supervisor of aides in Physio-therapy of the Medical Corps of the U. S. Army. She has had the benefit of all of the recent developments in this line of work brought out in the various war hospitals of England and the United States.

The work is divided into two parts—the first, massage, and the second, therapeutic exercise. It is well written and well illustrated and will prove a valuable little book on the subject for the nurse as well as the physician.

Medical Electricity and Roentgen Rays. With a practical chapter on Phototherapy. By Sinclair Tousey, M. D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. 3d edition. Thoroughly revised and greatly enlarged. Octavo of 1337 pages. 861 illustrations, 16 in colors. W. B. Saunders Co., Philadelphia and London. 1921. Cloth, $10.00 net.

Dr. Tousey has presented the most complete and comprehensive work on the subject of medical electricity which has come to our attention. He states in his original preface that it is impossible to write a book on the subject which will be strictly up-to-date as developments along this line occur so rapidly. This is most complete and exhaustive and covers the whole field of medical electricity.

General subjects covered are static electricity, dynamic electricity, physiological effects, electropathology, electrodes, electrodiagnosis, ionic medication, electro-magnets, electricity in diseases of the nervous system, high-frequency currents, phototherapy, the X-ray, Roentgen therapy, radium, etc.

The third edition of Doctor Tousey's work has been carefully rewritten and many new illustrations as well as new chapters have been added. It is a most exhaustive and valuable treatise and no medical library is complete without it.

A Text Book of Pathology. By Alfred Stengel, M. D., Sc. D., Professor of Medicine, University of Pennsylvania, and Herbert Fox, M. D., Director of the Pepper Laboratory of Clinical Medicine, University of Pennsylvania. 7th edition, reset. Octavo of 1111 pages. W. B. Saunders Co., Philadelphia and London. 1921. Cloth, $8.50 net.

For many years, Dr. Stengel's text has been a standard on the subject. His new edition, the seventh, follows the style of previous issues and presents the matter in paragraphic reference form. Much new material has been added and an extensive revision of every section has been made. Several entirely new sections have been added and such important headings as those dealing with nephritis, influenza and lymphomata have been entirely rewritten. A hundred new illustrations have been added to the present edition.

The work is divided into two general parts, part one on general pathology, and part two on special pathology. It measures up to the splendid standards maintained so many years and which have made it a classic on the subject. Doctor Tousey always succeeds in giving the student and practitioner a work which, while complete and authoritative, avoids speculation and controversy, taking always a conservative and defensible opinion of each subject. The seventh edition is as highly recommended as have been the previous issues of this splendid work.

Radiant Energy and the Ophthalmic Lens. By Frederick Booth. Introduction by Whitefield Bowers. 226 pages. 230 illustrations. P. Blakiston's Son & Co., Philadelphia. Price, $2.25 net.

The object of this book is to present from a didactic standpoint a study of the principles of optics; also the eye from an optical standpoint, accommodation, convergence, tests, ophthalmoscopy, skiascopy, refraction, the ophthalmic lens, transposition of prescriptions, fitting of frames, etc.

The division of the subject matter in paragraphs with headings of heavy type facilitates orientation and renders the concise compendium very useful for reference. There are a great many, mostly schematic, illustrations. C. Z.

Handbook of Clinical Hydro-, Balneo-, and Climato-Therapy. By Alois Strasser, Professor at Wien; Franz Kirsch, Dr. at Wien, and E. Somers, Professor at Zürich. Part 2, pp. 209-911. 48 illustrations. Urban & Schwarzenberg, Berlin and Wien. 1920.

The second part of this handbook discusses the special hydrotherapy of respiration, with a chapter on hardening of the body against colds, circulation, uropoietic, digestive organs, diseases of metabolism, as diabetes, adiposity, gout, scrophulosis, of the blood, joints, muscles, bones, and the nervous system.

In the section on balneotherapy, Kirsch says that the valuation of the healing properties of mineral waters has been materially changed by the modern physico-chemical views. The actually newly gained facts, however, are scanty and one often has to resort to a critical empirism. The largest space is devoted to characteristics of the single groups of mineral waters, e. g., the akratotherms, alcalic, carbonic acid, muriatic, iodine, iron, sulphur, radioactive springs, seabaths, mudbaths, etc., and, in a special part, to their therapeutic indications in diseases of the different systems of the body, including the sensory organs, with a sketch of the better known resorts and springs, alphabetically arranged.

The third section, by Professor Sommer, is intended

for concise, reliable reference on clinical climato-therapy from the practice for the practice. It deals with the physicometeorological properties and physiological therapeutic importance of the climatic factors, classification of climates, e. g., alpine, sea, desert, and on their indications. There are interesting chapters on seasickness and aviator disease, and a list of the most important alpine resorts of from 900 to 1300 m. altitudes.

From the foregoing brief synopsis, one will readily see the vast amount of practical information the work contains on subjects not considered in medical textbooks, but of the greatest value to the practitioner to whom it will prove a reliable guide in advising his patients. C. Z.

Disturbances of Instincts and Effects. (*The Parapathic Diseases.*) Part III. *Dyspareunia of Women.* Part IV. *Impotence of the Male.* By Wilhelm Steckel, Wien. 482 pages. Urban and Schwarzenburg, Berlin and Wien. 1920.

This work is a product of the psycho-analytical school written by an eminent pupil of Freud. The author considers these disorders as peculiar of our times, due to the influences of our over-refined culture. He also discusses the psychopathology of love. An abundance of interesting clinical histories have, for didactic reasons, been so arranged that the technic of psychotherapy progresses from the more simple cases to the most difficult problems.

According to Steckel, in no other field of medical science exist so many prejudices and obsolete conceptions, so that he has attempted not only a presentation of the whole modern psychotherapy, free from any dogma of an individual school, but also a complete exposition of sexual science, so absolutely necessary to every physician. The book is written in a most fascinating style permeated by the seriousness of the scientific investigator, and displaying his universal erudition. C. Z.

Tuberculosis and How to Combat It. A Book for the Patient. By Francis M. Pottenger. 272 pp. C. V. Mosby Company, St. Louis. 1921. Price, $2.00.

A new book by Dr. Pottenger is always welcome and his name alone is assurance of the value of the work. This little book is intended for the patient and his friends and answers the questions which they ask. The book discusses the questions which the patient and his family naturally ask and which arise in connection with his cure, with the adjustment of himself to others while a patient and the readjustment of himself to society after his disease has been cured.

The practitioner who meets tuberculosis in his daily work could well afford to keep several copies of this book in his desk and the giving of it could well be made a routine practice with these patients.

Types of Mental Defectives. By Martin W. Barr, M. D., and E. F. Maloney, A. B. 30 plates containing 188 illustrations. 180 pp. P. Blakiston's Son & Co., Philadelphia. 1921. Price, $3.00.

This book is written for those intending to take up work among the feeble-minded and who naturally desire to learn to easily recognize the various forms of mental defect and to meet the needs which the various types may require. Dr. Barr arrives at his classification by first separating broadly the untrainable idiot from the trainable imbecile, next, by dividing the imbeciles into grades of mentality and, finally, by indicating possible training for life work in industrial or manual lines according to individual proclivity.

The work is well written and is profusely illustrated. It would not be classed as an exhaustive or highly scientific work or as meeting the requirements of the medical man with advance knowledge of the subject, but it is an excellent book for the beginner or even for the layman desiring to acquire some knowledge of the subject.

The Principles of Immunology. By Howard T. Karsten, M. D., and Enrique E. Ecker, Ph. D. Illustrated. J. B. Lippincott Co., Philadelphia and London. 1921. 310 pp. Price, $5.00.

Dr. Karsten states in his preface that his work has been prepared in the hope that a concise statement of the facts and the more important hypotheses concerning the resistance to infection may serve to provide a clear understanding of a subject of the utmost importance in modern diagnosis and treatment, designed primarily for students of medicine and for those practitioners whose duties have made it impossible to digest the large mass of publications on the subject. The scope of the book is restricted to fundamental principles.

He has followed the plan throughout of presenting on an experimental basis the demonstrated facts and to supplement these with brief discussions of the practical and theoretical bearing of the phenomena upon resistance and disease in man. In three appendices, he has collected certain material concerning the practical application of immunology to the prevention and cure of disease. The work is most highly recommended and an idea of the scope can be gained by the following subjects to which individual chapters have been given: Virulence of Organisms; General Conditions of Infection and Resistance; The General Phenomena of Immunity; Toxins and Antitoxins; Agglutinins and Precipitins; Cytolysins; Cellular Resistance; Complement Fixation; Application of Complement Fixation to the Diagnosis of Disease; Hypersusceptibility; Hypersusceptibility in Man; Defensive Ferments.

Gynecology. By Brook M. Anspach, M. D., Associate in Gynecology, University of Pa. 750 pp. 526 illustrations. J. B. Lippincott Co., Philadelphia and London. 1921. Price, $9.00.

Dr. Anspach has succeeded in producing one of the best textbooks on Gynecology we have seen, presenting the subject in systematic form, giving all necessary information and still omitting such details as are not immediately required for practical purposes. It is a

Treat Hay Fever With Suprarenalin

SUPRARENALIN is the remedy in Hay Fever. It may be administered locally, internally or Hypodermatically.

Locally—Solution and ointment are applied to affected parts.

Internally—Solution should be given, so that the patient will get from 1/70 to 1/10 of a grain; the dose repeated in from 10 minutes to 2 hours, according to effects.

(Let the patient hold Suprarenalin in the mouth for awhile, as the best systemic effects are got by absorption through the membranes.)

Hypodermatically — Suprarenalin Solution is injected into the arm or neck.

Suprarenalin is recommended in Hay Fever in various forms. Herewith are suggestions made by men of authority.

One recommends using solutions of varying strengths from 1:10,000 to 1:1000 made up with normal salt solution. To sustain the relief to some extent, he suggests spraying over the constricted mucous membrane a 5 grain to the ounce solution of menthol in albolene, benzoinol or other light oil.

Another uses Suprarenalin Solution in strengths varying from 1:10,000 to 1:1000, applying these locally to the conjunctiva and nasal membranes. He also suggests the following combinations which are snuffed into the nasal passages or insufflated by means of a nasal blower.

1. Suprarenalin ..... 1 part
   Zinc Stearate (Comp) ..... 100 parts
   Heavy Magnesium Carbonate..... 900 parts
   Mix. Triturate well.
2. Suprarenalin ..... 1 part
   Zinc Oxide ..... 100 parts
   Bismuth subcarbonate ..... 400 parts
   Mix. Triturate well.
3. Suprarenal gland substance..... 1 part
   Zinc Stearate ..... 20 parts
   Zinc Oxide ..... 80 parts
   Mix. Triturate well.
4. Suprarenalin ..... 1 part
   Bismuth subcarbonate ..... 300 parts
   Zinc Oxide ..... 300 parts
   Zinc Stearate ..... 200 parts
   Mix. Triturate well.

A prominent nose and throat specialist recommends:

	gm.		
Cocainae hydrochloridi	15	or grs.	iiss
Sodii boratis	30	or grs.	v–
Suprarenalin Sol. (1:1000)	4	or ʒ	i
Glycerine	2	or ʒ	ss–
Aqua Camphorae ad.	30	or ℥	i

M. Sig. Use as a spray to the nose four or five times daily or oftener if needed.

Suprarenalin Solution 1:1000 (Armour) is stable, uniform, non-irritating and is free from chemical preservatives. *Literature to Physicians.*

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work which will prove thoroughly satisfactory for the classroom and in the library of the busy general practitioner. It will be found to be a ready guide to the accurate diagnosis and the successful treatment of the gynecologic conditions encountered in every day practice.

In addition to the affections of the generative organs, those diseases of the intestinal and urinary tract most frequently encountered in women have been considered. Such subjects as static backache, sacro-iliac sprain, toxic arthritis, gonorrhea, syphilis, menstrual disorders, sterility, operative technique and the preparation for same, post-operative treatment and the management of its complications; radium, X-ray therapy and the use of vaccines have all been dealt with under separate heads.

Believing that a logical plan for study of the pathology and methods of treatment should be preceded by a description of the normal structures and of the normal functions, chapters on anatomy and physiology have been included to refresh the memory of the student and practitioner. The work is printed on a high grade of paper and is beautifully and profusely illustrated, the majority of the illustrations being new and original.

The Surgical Clinics of North America. (Issued serially, one number every other month.) Volume I, Number 2. By New York Surgeons. 326 pages, with 116 illustrations. Per clinic year (February, 1921, to December, 1921). Paper, $12.00 net; Cloth, $16.00 net. W. B. Saunders Company, Philadelphia and London.

CHEMICAL TRADES ENDANGERED BY THREATENING ANTI-SALOON LEAGUE LEGISLATION.

BY CHARLES BASKERVILLE.

Professor of Chemistry of the College of the City of New York and Member of the American Chemical Society Committee on Industrial Alcohol.

When the chemical and allied industries wake up and find that they face extinction as a result of the new Volstead Bill, if enacted, there will be many complaints. As one concern after another goes to the wall, there will be loud lamentations and appeals to members of Congress, the Federal Departments and the Courts.

But then it will be too late!

Now is the time to act; to work, to send letters and telegrams to Congress and to hold meetings of protest.

Who can blame the Anti-Saloon Leaguers for passing a bill they want, if they can? That is their business, regardless of what they do to industry or to science or to medicine.

The fact that there is a division in the socalled "dry" forces should not create over-confidence or lull anybody to sleep. The genuine Prohibitionists, represented by thoughtful conservatives who are mindful of the legitimate needs of industry and medicine, are opposed to the new Volstead Bill. But the extremists are beyond reason, and they are only fighting the harder without a thought of the damage they will do to everybody and everything else.

If the chemists and the manufacturers rely upon the division among the Prohibitionists for Salvation they are only inviting disaster.

Members of Congress will not be to blame if the chemical industries are destroyed. These men are elected from districts in all parts of the country. They are not chosen because they are chemical experts or food experts or medical authorities. They might know but rarely do know much about any of these subjects.

But the members of Congress take pride in representing the needs of their districts. They are always ready to listen to the "voice from home."

The members of Congress should hear from home!

There is probably not a Congressional District in the United States that does not contain an industry dependent upon the use of alcohol, whether it be a drug manufactory, a paint or varnish works, a photographic establishment, a dye works or even a retail druggist.

The representatives of that District may not have any knowledge whatever of that fact. It is for the chemist, the manufacturer, the physician, the druggist, the leaders in trade and business to tell him.

If the Congressman is not told, who is to blame?

The members of Congress should be told that the new Volstead Bill known as H. R. 6752 is a bill aimed at the industry and the business of the United States. They should be told that it is much more than a bill to prevent the use of beer,—that it goes much further and places impossible and absurd handicaps on the conduct of any legitimate industry using alcohol.

The opposition to the saloon, the opposition to the use of spirituous liquors is not involved in this discussion. It is not a question of law enforcement, as the chemists and manufacturers are united for enforcement of the existing law. The members of Congress have a right to know that.

It is for the trade to advise their representative in Congress of the facts and of their vital interest in this legislation.

Every chemist and every manufacturer and everyone else connected with the use of the chemical alcohol in science or the arts should make it plain to his Representative in Congress, the man from his own district.

Remember, Congress may act quickly.

The message should be sent immediately.

INTRACRANIAL PRESSURE IN DISEASE.

The intracranial pressure was determined by Charles E. Kiely, Cincinnati (Journal A. M. A., Feb. 19, 1921), in thirty-one cases. It varied from 25 in a case of taboparesis to 400 + in a case of syphilitic myelitis. In two cases of tumor the pressure was 136 and 160, respectively. Kiely uses an O'Brien needle to which a by-pass is added.

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ORIGINAL ARTICLES

SELECTION OF OPERATION IN TOXIC GOITER.*

BY S. J. SEEGER, M. D.,

MILWAUKEE.

In toxic forms of goiter the degree of cure and the subsequent efficiency of the patient are dependent on the amount of damage which has been done at the time the disease is arrested. In the very mild cases attention to hygiene, the elimination of intestinal intoxication, the removal of diseased tonsils or of infected teeth, the correction of bad psychic influences, will often give relief, and at times a complete, spontaneous cure will follow a course of so-called medical treatment. It is impossible in a given case to predict the course and severity of the toxemia and the physician, who permits these patients to acquire a permanently damaged heart and nervous system, while carrying out a course of medication, is as culpable as the surgeon who rushes into the operative treatment on a hasty diagnosis and without careful study of the operative risk in the individual case. Surgery is the best means we have today for the arrest of the toxemia and the advisability of operation should be considered early in every case and should not be delayed until degenerative changes make the patient a poor surgical risk.

In classifying toxic goiters, we follow the grouping of Plummer, who divides these cases into (1) the toxic exophthalmic group, associated usually with primary hypertrophy and hyperplasia of the gland, and (2) the toxic, non-exophthalmic group, usually associated with adenomas and the differentiation of which, from a pathologic standpoint, from the non-toxic adenomas, is not complete. His description of the course of the average case of exophthalmic goiter is of value as a measuring-rod in determining the stage of the disease in the case to be studied. He states, "If the average course of the intoxication be represented by a curve, the greatest height is reached during the latter half of the first year, then suddenly drops to the twelfth month. In many cases, it reaches the normal base line in the next six months. More often it fluctuates with periods of exacerbation for the next two to four years. Secondary symptoms and exophthalmos may remain but the active course rarely continues over four years without distinct intermissions." This type is frequently somewhat abrupt in onset and the symptoms appear in typical cases within a year of the appearance of thyroid enlargement. Some of these cases are fulmination in character and die within a few months or become poor surgical risks soon after the onset of symptoms. The toxic adenomas vary from the true exophthalmic cases in that the onset of the toxemia is gradual, symptoms appearing on an average, fourteen years after the appearance of the goiter. The toxemia in these cases results usually in cardiac degeneration and in symptoms referable to the nervous system, and its presence is often detected in the course of a routine examination in a patient presenting herself for other reasons. Exophthalmos is rarely present in these cases and crises and gastrointestinal symptoms are not such marked features as in the true exophthalmic group. In Plummer's cases the average age of the first group is ten years younger than the second.

The diagnosis of toxic goiter being fully established the surgeon is confronted with the problem of selecting the best operative procedure. This is frequently a difficult task. The operative procedure varies in different types of cases and at different stages of the same case. There is no field of surgery in which finer judgment is required and in which clinical experience is a greater asset. Certain principles can be laid down which will serve as guides in the selection of the operation, but there are so many factors to be balanced that no set of rules can be given which will cover all cases. One's choice of the operation is made on the basis of one's judgment of the severity of the toxemia, the extent, if any, of the degeneration of the vital organs, and the stage of the disease.

*Read before the Surgical Section, State Medical Society of Wisconsin, La Crosse, Sept. 10, 1920.

The operations used in the exophthalmic group are: 1. The injection into the gland of substances designed to destroy a portion of it, probably the best procedure of this type being the hot water injection of Porter; 2, the ligation of the superior poles of the gland with its blood vessels, and 3, sub-total thyroidectomy. Sub-total thyroidectomy is the operation of choice. Frequently, however, the patient is seen at a time when this cannot safely be done. Evidences of a severe toxemia, a history suggesting that the patient is approaching a crisis or has recently passed through one, and signs of degeneration of the myocardium should lead one to proceed with caution. The excitement attending the patient's first visit will frequently produce an exascerbation of symptoms and may mislead one when attempting to interpret the degree of toxemia. For this reason, observation over a period of time is essential in these cases before making a decision regarding the best procedure. It is well to remember that the surgery of toxic goiter is not emergency surgery and that at certain times operation is to be deferred. Loss of weight and gastro-intestional crises with vomiting and diarrhoea are significant signs of severe toxemia. While there is no one accurate and infallible method of determining the amount of psychic and physical trauma these patients will stand without developing a severe storm of symptoms, a careful analysis of the history and symptoms and physical signs enables one who has observed numbers of these cases to arrive at an accurate estimate of the operative risk. In conjunction with the clinical observations, studies of the basal metabolic rate are of value in determining the degree of hyperthyroidism present at the time. Men skilled in the interpretation of the symptoms of toxic goiter, who have made metabolic studies in large number of cases, report that the degree of hyperthyroidism estimated from the clinical features and the degree of hyperthyroidism determined from the basal metabolic rate practically always correspond. The metabolic rate gives no index of the amount of damage which may have been done previously, and it can be used only partially as a means of determining the best operation. Changes in the blood picture, emphasized by Kocher as of great importance in gauging the toxemia, are now not considered of much value in solving this problem.

Ligation of the superior pole, either on one or on both sides is done either to test the ability of the patient to stand thyroidectomy or to improve her condition so as to make thyroidectomy safe. It has been a valuable addition to goiter surgery. Most surgeons do not practice ligation of the inferior vessels because of the technical difficulties of the operation. Ligation of the superior pole while it is a minor procedure from a technical standpoint is one whose employment in severely toxic cases is dangerous, and its ill advised employment may result in death. When done at the proper time it is attended so frequently by results which are little short of spectacular that it is one of the most useful and satisfactory of surgical procedures. When employed as a preparation for thyroidectomy it is usually done at five or six day intervals and under local anaesthesia. Patients are then sent home for a period of two to four months at the end of which time thyroidectomy can be done safely, in the majority of cases. These patients gain on an average from twenty to thirty pounds in weight and the improvement of all symptoms is as a rule quite marked. At times, if in doubt as to the ability of the patient to stand thyroidectomy as a primary measure, ligation of one side may be done. If this is followed by a slight or by no reaction, thyroidectomy may safely be done in the course of a week. If reaction is severe a second ligation is done and a period of several months is allowed to elapse before thyroidectomy is attempted. The only objection to ligation is the additional scarring. When incisions are properly made, in a natural crease of the neck, usually present, the scar as a rule is a negligible feature and is entirely outweighted by the value of the operation. Severe cases which do not react favorably to medical treatment after a reasonable length of time may be ligated after the preliminary injection of hot water into the gland. This procedure seems to lessen the severity of the reaction following ligation.

Whenever the surgeon doubts the ability of the patient to stand a contemplated operation it is well to do less than was originally intended in an operative way. If thyroidectomy was planned in such a case, it is well to do one or two ligations instead, if two ligations were planned do one, or do hot water injection. Disinclination to return the patient to bed without doing anything in an operative way will lead to regret when severe cases react unfavorably on entering the operating room.

Patients who have had exophthalmic goiter for years but who have passed the stage in which there is toxemia from the thyroid are not surgical cases. These patients, while suffering from the permanent effects of a severe hyperthyroidism, namely exophthalmos, cardiac damage, and nervous symptoms, frequently show, in addition, signs of myxedema. Removal of a portion of the thyroid in these cases is, of course, contraindicated.

In the toxic adenomas, which must be differentiated from true exophthalmic goiter, thyroidectomy is as a rule the primary operation. When seen early in the course of the frequently slow toxemia, these cases are not severe risks, but when seen later, when cardiac degeneration has taken place, they are among the most dangerous cases for operation. Local anesthesia is frequently employed by us for operation in this type of case with gratifying results. For some reason these cases do not improve in nearly as large a per cent following ligation as do cases of true exophthalmic goiter. The reason for this is not clear. At times improvement does follow and it is advisable to practice preliminary ligation in selected cases.

CANCER INVESTIGATION AND EXPERIMENTAL CANCER.*

BY WILLIAM E. GROUND, M. D., F. A. C. S.,

MEMBER SOCIETY FOR CONTROL OF CANCER.

SUPERIOR, WIS.

Before proceeding to the main topic of this paper, there are a few points about the cancer problem to which I wish to call particular attention.

Cancer is one of the most frequent causes of death after middle life. About 100,000 die anually in their prime from malignant disease alone, and is increasing at the rate of 2% a year.

The way to frustrate this advance is not to devise newer and bigger operations, nor to engage in lengthy discussions regarding the merits of the X-ray or the cautery, nor to the exploitation of radium. While the wrecking crew is a valuable asset to railway maintenance, it is designed in no way to take the place of safety first devices and accident prevention through education and public instruction.

A lengthy discussion of this phase of the question would be very much detrop, still I cannot help referring to the fact that we as custodians of the lives and health of the community from the ravages of disease and premature death, must first inform ourselves as to the exact relationship between certain deviations from normal tissue behavior and that which indicates abnormal structural change tending toward malignancy.

The gross appearance of cancer processes in their terminal stages in no way resembles the inception. Gross pathology falls short of teaching the lesson of life saving, being principally engaged in demonstrating how much the human body can be ravaged by disease before death relieves the victim. Deadhouse pathology is a poor excuse for the practice of medicine. Surgeons were opening perityphlitic abscesses until McBurney, Wyeth and Murphy, pounded into the heads of the profession the advantages of early and interim operations. Comparisons of the pathology of appendicitis as we see it now, and as seen 25 or 30 years ago would be odious, in the extreme. Just so we must change ends with the cancer disease; we have been working hardest at the wrong end. It is axiomatic that if a disease is to be dealt with at its earliest inception, there must exist a thorough working knowledge of its initial pathology or late physiology and clinical manifestations. Unfortunately this has not been the case with cancer, and until quite recently nothing definite was known of its real etiology and only a confused idea of associated pathological processes. If we will but follow the rays of light that are now appearing above the horizon, I firmly believe we will be led out of the wilderness of darkness and chaos through which we have been groping so long. The same difficulties were encountered in the early enlightenment stage of tuberculosis and many other diseases that eventually become readily amenable to rational treatment and some of them to practical eradication.

However gloomy the outlook has been with regard to the suppression of cancer diseases, a close study of the results of the experimentations and investigations that have been made especially during the last decade, will reveal many indications of actual progress toward the solution of the cancer problem.

What we lack now is coordination in effort and ideas of the clinician and laboratory worker and

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*Read before Wisconsin Surgical Society, at Marshfield, May 18, 1921.

the surgeon, and of all that are intensely interested in the problems the subject presents. It will be interesting and I trust helpful to refer briefly to some of the real epoch-making teachings of such vestigators as Apolant, Bashford, Jansen, Fibiger, Loeb, Morau, Murray, Rous, Sweet, Wiel, Gaylord, Slye, and many others; because from them will be seen at once the relation which the several lesions bear to each other and essentially to themselves, and it will also show where the clinician can receive his greatest help. My humble effort at trying to collaborate some of these data, will, I hope, receive the charity which it deserves.

There is ample evidence in the way of historical references to justify our belief that cancer is of very ancient origin. At least 2,000 and perhaps even 4,000 years ago intelligent descriptions of cancerous lesions appear in literature. Bizare classifications including conditions that were not malignant, etiological factors that would run through all the vagaries of the human imagination, were invoked to account for this disease. It would be a tax upon your patience and I feel a waste of time to even mention them. They would serve no purpose for our discussion. It is enough to say that more progress has been made in the last 25 years in coming to an understanding of the cancer process, than was made in the whole 4,000 years.

While these investigations do not disclose any specific medical or surgical cure for advanced cancer, they do show that it is preventable and curable. Preventable by knowing and removing precancer conditions, and curable just in proportion to the earliness of recognition and interference. No specific has been discovered for tuberculosis, and many other diseases, yet their treatment is on the whole successful.

We would be greatly assisted in our discussion if we could even define cancer. Like electricity we know cancer better by what it does, than by what it is.

America was the first to instigate a movement for cancer research along rational lines, and largely through the influence of the late Dr. Roswell Park, of Buffalo, a laboratory was equipped and maintained, with Dr. H. R. Gaylord in charge. In 1901 the State of New York took over this laboratory and it has since been known as the Cancer Laboratory of the N. Y. State Board of Health. Since then laboratories of cancer research have been established in connection with Harvard Medical School and the Mass. Gen. Hosp., the Collis P. Huntington Fund; The Rockefeller Institute; The St. Louis Cancer Hospital, and George Crocker Special Research Fund in Columbia University. Almost simultaneously other centers of research were established in various centers in Great Britian, France and Europe.

The systemic or humoral theory of cancer, that had held the boards for so many years, was fast loosing its effect and the tendency during the very latter part of the last century, was to attribute its etiology to microbic infection of some kind in some special manner. And it was for this reason largely that, the acuteness of experimentation became so suddenly in evidence. But like Columbus, these explorers in the domain of biology did not discover what they expected, but something greater; a new world to explore. In the main the parasitic cause of cancer has been abandoned, and the simplicity of the problem removed. For had a microorganism been discovered to account for the peculiar behavior of the tissue cells, as, in say, tuberculosis and syphilis, the question would indeed have been much simplified. We know what and how the living organism responds to the stimulus we call cancer but what makes tissues so behave is the betinoir.

The association of microorganisms with a noticable tissue proliferation and the formation of secondary foci, comparable to metastases, and the presence within the tumors of bodies resembling various unicellular structures, and the fact of the endemic cancer due to supposed cage infection, led many to the conclusion that cancer was also of bacterial origin.

Powell White in his book on The Pathology of the Growth of Tumors, puts the matter thus: "Since cells proliferate under normal conditions, the assumption of a parasite to explain it is quite unnecessary. Direct stimulation of cell growth by a parasite is an unknown occurrence in biology and is opposed to the facts of parasitism. Numerous microorganisms that have been described by different observers have not stood the test. Undoubtedly bacteria and other organisms may be obtained from cancers, but their occurrence is apparently accidental or at most incidental. Discussing the same phase of the question Loeb says, "No unicellualer organism has been found in cancer, no

agent can be separated from cells in mammalian tumors. The structures taken to be paracites were shown to be cell degenerations and phagocytoses. The endemic occurrence of cancer is due to two factors: First, to the hereditary transmission of cancer in certain strains of animals, and second, to the introduction of metazoic paracites which infect a certain class of animals at a particular place and act as a temporary stimulus of the tissues, and which later disappear after the tissues have been converted into cancer. This applies for instance to cancer in rats observed by Fibiger. The arguments which set up against the significance of microorganisms in the etiology of the large majority of mammalian tumors seem to be convincing. Observations show that human cancer is in many cases due to long continued action of growth stimuli on cells. Occasionally a growth stimulus may call forth a sudden appearance of cancer. Experimentally cancer has been produced through the action, physical or chemical, of growth stimuli and has been prevented through the withdrawal of chemical growth stimuli as in mammary cancer in mice. It has been shown that no immunity can be produced against spontaneous or auto-cancer but only against homoiocancers or transplanted cancers. Immunity against transplanted cancers can be produced through normal tissues of the same species. Through chemical stimuli normal tissues can be transformed into cancerous tissue without the intervention of ulceration. The injection of any known microorganism does not produce cancer."

Clinical observation has definitely settled, the fact that cancer is produced by chronic irritation. It may be external, or mechanical, or internal, or chemical, and ductless gland growth stimulation. This phenomenon is observed in plants, lower animals, and in man.

Students of comparative pathology assert that tumors analogous to malignant and non-malignant in animals and man are found in the vegetable kingdom. One of the most interesting and enlightening contributions to the study of the pathogenesis of tumor formation, is that of Erwin F. Smith, of the Bureau of Plant Industry, United States Department of Agriculture. He maintains that crown gall in plants resembles malignant tumors in animals and possesses the properties of neoplastic growth. He originally believed these tumor formations to be due to the influence of a bacterium, but later has shown that by irritating the plants with nitric acid the same results are procured. In the meeting of the A. M. A., at New Orleans last year, I had the pleasure and edification of studying his specimens, which were many and I should say conclusive.

Cancer is found in many of the lower animals, especially in the domesticated, and those in captivity. The horse, cow, sheep, dog, cat, pig, rabbits, rats, mice, and guinea pigs, birds, fish and reptiles.

Of the domesticated animals, the dog seems to lead in frequency of occurrence, being most prevalent in the animals over five years of age. Vary rare in dogs under five. The organs affected are in order of their frequency, the mamma, skin, anus and liver. In the cat the mamma and skin; the horse, the antrum and nasal cavities, and the penis; bovines, the liver and stomach, and the caruncula of the eye. In cattle, cancer frequently arises at the site of a brand and is known as brand cancer, while in many of the draught animals as epithelioma develops at the base of the horn, horn-core, especially prevalent in India. Malignant tumors occur in a large percentage of artificially bred fish, but those in the free state are not free from disease.

Amplifying the work of Hanau and Morau, Jensen in 1902, demonstrated in case of breast carcinoma of the mouse, true transplantation from one animal to another. The completion of these experiments were made by Borrel and Haaland, workers in the Imperial Cancer Research Fund, and published in 1905. These investigators made clear that, from a particle of tumor tissue transplanted, there developed with one and the same strain, not only a local tumor, but likewise, expansive or benigned, and infiltrative or malignant growths, with secondary metastases in internal organs and the lymphatic glands with final terminal cachexia and death. Later Haaland and Murray in the same laboratory have added all the details necessary to complete the analogy with malignant neoplasms in man. The availability of short-lived animals such as rats, mice, rabbits, etc., in which cancer often develops spontaneously, renders them particularly amenable to this kind of experimentation. The rapid life-cycle from youth to cancer age produce criteria by experiment with these tumor, quite conclusive enough to place them in the catagory of the malignant neoplasms of

man. Cancer can be transmitted from one individual to another of the same species.

"Transplantability is not necessarily a proof of cancer growth. Benigned tumors and normal tissue can be transplanted. Each kind of tissue maintains its growth energy, but benigned tumors and normal tissue succumbs more readily to the homotoxins, than do malignant transplants. Cancer tissue is characterized by growth energy and motility and length of time such characteristics persist after cessation, of the original stimulus.

Transplantation tumors have no differentiation at all and do not progress to differentiation as does embryonic tissue, and is peculiar to the individual in which it arises. A portion of the cancerous tissue transferred to another part of the same individual is extremely vicious in its growth. But transferred to the body of another it is rarely dangerous." (Loeb.)

From this it was but a step to attempts at production of cancer from normal tissue experimentally. This has yielded most edifying results in the hands of Fibiger, Perre Maric, Clunet and particularly, Yamagawa and Ichikawa. Earlier attempts were made to artifically produce cancer by irritation, but failure was probably due to the brevity of the irritation period.

It is a well known clinical fact that cancer appears at the site of chronic irritation. This has been observed in both man and animals, and its role is very important. But it must be non-traumatizing, and applied over a long period of time. It is doubtful if a single injury ever produces cancer. Clinical evidence has well established this fact and experimental investigation has corroborated it.

In the human animal, the sites of election for malignant growth are at the points of natural or artificial irritation. This may be mechanical or chemical. It is highly probable that chemical irritation is the more instrumental in exciting change from normal to malignant tissue behavior, provided the tissue in question has the histological structures out of which to build a tumor, a sarcoma, a carcinoma or an epithelioma. This stimulation to abnormal tissue growth, may be influenced by harmones or even by nerve influence. So that, in speaking of irritation we must take a broad concept of the subject.

Investigations are in process regarding the influences of diet, of invironment, of heredity, and of irritation, as having a predisposing cause to cancer disease. The availability of short lived animals that have a strong predisposition to cancer has been very helpful. Given then, an animal in which cancer is prevalent, Febiger is able to produce cancer of the stomach in rats by feeding them with cockroaches infected with nematodes. Regarding the results of his researches he says the development of neoplasms can be induced in the fundus of the stomach and also in the tongue. These neoplasms possess exactly the same histological structure as malignant epithelioma in man and animals. They grow invasively into connective tissue and muscular tissue and produce metastases in lymph-nodes, perineural lymphatic spaces, the lung and the peritoneum. They in some instances, continue their growth whether the Spiroptera disappear entirely or not. They are transplantable and when transplanted neither the tumors nor the metastases contain Spiroptera. That these tumors are true carcinomata cannot thus be doubted.

Bulloch and Rohdenberg produced similar results, by introducing balls composed of celluloid covered with spines of pig bristles, and balls of cork armed with pin points. Cotton wicks and pieces of sponge impregnated with Scharlach or pine tar oil gave rise to reactions resembling carcinomata.

The production of cancer by irritants is determined solely by the point to which the irritant is applied. This has been typified so frequently by the occurrence of cancer in those engaged in certain trades, occupations or habits, as to call for the designation of "occupational cancer".

It is common knowledge that tobacco smoking is often the determining cause of cancer of the lip, mouth and larynx in those who possess the predisposition. That the incidence is very high in chimney-sweeps, coal tar, paraffin workers, etc.

Comparable to the high percentage of cancer of the lips, tongue and larynx, may be made the relative frequency in those locations in women; as women have not here-to-fore been conspicuous as smokers, chimney-sweeps, etc.

But I am reminded that conditions are rapidly changing and that the gentle sex is due for an increase of cancer incidence. In those localities where women are known to use tobacco, cancer of mouth is relatively common. In the Philippines where a chew is made of betel nut, tobacco and lime, and in India where a similar cud is used,

cancer occurs in these organs with about equal frequency in the two sexes.

Another striking example is the Kangri Cancer; an epithelioma occurring among the natives of Kashmir, on the anterior abdominal wall, caused by wearing a small earthen jar covered by basket work in which is kept burning charcoal for purposes of warmth; these baskets are suspended from the waist under flowing robes next to the skin.

A study of "occupational cancer was made by Ross, at the Lister Institute of Preventive Medicine, London, from whose report I freely quote. The frequency of cancer in the Briquette workers of South Wales led to an investigation by the government and disclosed considerable evidence both circumstantial and experimental to show a direct causative relation between certain commodities and cancer. Ross reviews the cancer incidence in those engaged in the handling or manufacture of such articles as coal and its by-products, tar, pitch and soot; of analine dyes and petroleum, X-ray, arsenic, manure, etc., and he concludes that while simple mechanical trauma may alone produce both carcinoma and sarcoma another element, that of chemical influence must largely share the responsibilities for the induction of cell proliferation. If it were not so, we should expect to find a similar incidence, among chimney-sweeps and brequette makers, as among stonemasons and metal grinders, who do not particularly suffer. It seems interesting to consider the hypothesis that this investigator has brought up to account for occupational cancer. When the active commodities are examined collectively it will be seen that all of them, with one exception, are products of or are derived from, the products of death and decomposition of living matter. Coal and its derivatives, including paraffins, charcoal, tobacco, betel nut and manure, all have such a derivative. The one exception is arsenic, and that being a powerful cell poison may possibly produce the products of cell death and decomposition in the tissues. This is a striking point, for undoubtedly the commodities do cause a predisposition to epitheliomatous growth, when impacted for a long time in the tissues of the skin; whereas inorganic commodities such as stone dust and metal dust are ineffective. In this connection, it is useful to remember that carcinoma seems more frequent in general at sites which are continually subject to organic matter undergoing bacterial decomposition, such as the stomach, rectum and anus, scrotum, prepuce, uterine, cervix, and breast. In sarcoma, this does not seem to apply any more than does the age incidence.

Decaying organic matter of all descriptions fertilize living matter and promotes cell proliferation, being used extensively for the growing of plants in agriculture. Up to a certain point the more putrid the matter, the more pronounced is this fertilizing property. Soot is used by gardeners for this purpose, but it is only useful when it is wet, showing that it is necessary to dissolve something out of it, namely nitrogenous compounds. Mere grit has not this action. Ammonical liquor distilled from tar is a very valuable commodity, owing to the nitrogenous compounds it contains, being converted into artificial manures. The trade in nitrates for fertilization is enormous. Soot and products causing the cell proliferation leading to warts, would seem to act with this principle, and epithelioma is also a growth of an excessive cell proliferation.

To sum up: There seems to be some specific chemical agent responsible; mechanical irritation plays only a minor role. Lastly there is a probability that the mischievous agents are organic nitrogenous substances of group common to all the dangerous commodities, or it is possible that they maintain a microorganism, which in a neoplastic constitution, may influence epithetical cells to undergo disordered cell multiplication.

Young workers in tar suffer from warts, middle aged from squamous epithelioma that falls off and cures itself, and the older workers suffer and die, from typical squamous epithelioma.

Senile warts occur on the hands and arms of farm laborers who frequently handle manure. The incidence of cancer in these localities, are here nearly double that of males not so occupied. In Germany agricultural laborers are especially liable to skin cancer.

In the case of arsenic in addition to being a cell poison, it induces keratosis of the skin, which is now universally admitted to be a pre-cancer lesion. The keratosis mechanically inducing fissures, which readily become infected with bacteria and then ulcerate, the ulcer finally becoming cancerous.

Pye-Smith published a collection of 31 cases of arsenic cancer giving an accurate description of each.

Old untreated varicose or syphilitic ulcers are very prone to become malignant.

The familiar behavior of radiation burns of an intractable nature need only be mentioned. They lead to ulceration which is liable to malignant infiltration. Syphilitic lesions are more frequently followed by cancer than are tubercular.

Finally Ichikawa and Yamagiwa, Japanese investigators in the Pathological Institute of the Imperial University, Tokyo, have actually produced carcinoma in the ear of the rabbit by repeated applications of coal tar. In the report of their experiments in the Journal of Cancer Research they write as follows: The repetition or continuation of chronic irritation may cause a precancerous alteration in epithelium previously healthy. If the irritation continues its action, carcinoma may be the outcome, even though no specific agent has been interpolated.

For our experiments, we have employed mainly the ear of the domestic rabbit, an organ in which no spontaneous new growth has ever been reported. Among the methods of mechanical or chemical irritation chosen, the painting of coal-tar upon the inner surface of the ear has been most efficacious in producing carcinoma. Folliculo-epitheliomata have arisen in nearly all ears after a period of more than 100 days from the beginning of the application, numbering in one instance, twenty on one ear. The size of the lesions varied from that of a grain of rice to that of a sparrow's egg. Some later showed a more malignant character and it could be proved, both macroscopically and microscopically, that we had produced eight cases of carcinoma fully developed, while 25 others were in earlier stages. We were able to demonstrate metastases in the lymph nodes at the root of the ear and in the submaxillary region.

As we have seen cancer is no respector of persons. It affects rich and poor, male and female, of all climates, and countries; but with variable proportions. Cancer is a disease of civilization and its frequency and mortality advances steadily in proportion as various tribes and people have come more or less under its influence and adopted its manners and customs. The whites have more cancer than the negro, and the American negro more than the African negro.

Primarily it is well known that cancer in order to thrive must have a profusion of nourishment, and we therefore find the cancer victim has been a good feeder and is well nourished and in the latter half of life. Tuberculosis for instance occurs in the under-nourished in earlier life.

Maude Slye in a recent number of the Journal of Cancer Research has made a demonstration of this in mice. She observed the great difference in the rate of tumor growth in the producing and the non-producing females, and in the rate of tumor growth in reproductive and non-reproductive periods in the same female. Without exception the amount of tumor grown by a female while pregnant was markedly less than that grown by non-pregnant females. The tumor selected was an alveolar tubular carcinoma of the breast. The normal course of these spontaneous tumors in mice that are not bred, is very rapid, the mouse rarely living over six weeks and often less than a month after the appearance of her tumor. The tumors grow to a great size, frequently as large as the body of the mouse. When these tumorous mice are bred, the tumor scarcely grows at all during pregnancy. The duration of the tumor is greatly prolonged if the mouse is kept constantly breeding. When the mouse ceases reproducing, the tumor grows with tremendous rapidity, the female only living a week or two after the birth of her last litter. During the six or eight days a mouse is non-reproductive, she grows enormously more tumor than during the eight months or year that she is reproductive. Slye concludes that cancer and reproduction, both being growth processes, draw upon the same energy residum and are made possible by the same foods, hence the food energy used by one is withheld from the other. Between pregnancies, the energy which was running into reproduction is released and diverted into tumor growth. If the tumor growth considerably antedates impregnation, the current of energy is already being used for the tumor and is with difficulty diverted for pregnancy. Hence, when a female is well advanced in tumor growth before impregnation, there are rarely any offspring brought to birth. When offspring are delivered, they are few, small, undernourished and rarely suckled.

When tumor growth is not interfered by pregnancy, it is extremely rapid in mice which are young, well nourished, and vigorous; very slow in mice which are old, feeble, or with complicating disease.

Another point which shows the close relation-

ship between the growth of embryos and the growth of tumor, is the great frequency with which breast tumors are nearly synchronous with delivery. Hyperstimulation of any tissue seems to originate cancer of those tissues, in individuals of cancer tendency. The intense stimulation incident upon lactation tends to originate cancer of the breast in individuals of breast cancer tendency.

The question of heredity naturally enters into any discussion of cancer. In the direct inheritability there is probably no reason to believe; but that there is a decided tendency to neoplasms and to cancer, passed from parent to child there is every reason to believe. Clinical observation has long suggested this, and laboratory experimentation has proved it. Yet text books keep on repeating the ancient statement that heredity has no influence. It is amazing how long it takes an erroneous teaching to be expurgated. Fortunately for us we are not compelled to depend on the average medical book for our information. We have high-grade periodicals that gives us the fruits of the best minds at the earliest possible moment. These magazines should be patronized better than they are. Few have been able to exist without taking on a load of refuse in the way of advertising to pay the freight. Most of the medical books that are published nowadays, could be dispensed with, and our lack of knowledge not be noticeable. Books are made largely by assistants, office clerks and librarians, the author at most merely guiding it along, and when a book is once out it takes but little guiding to make new editions.

Loeb in the June, 1920, number of the American Journal of The Medical Sciences has the following to say: It is commonly assumed that heredity plays no part in the origin of cancer in man. The prevalence of this view is due to the fact that the methods used were those usually applied in human mortality statistics; the frequency with which cases of cancer occurred in the ancestry from cancer and other diseases was compared. Murray found on the average about 20% of cancerous mice among those whose direct ancestors had suffered from cancer, and 11% among those whose direct ancestry had been free from cancer. Loeb and Lathrop produced strains which in some families reached as high as 80%, while in others cancer was rare or absent. The inheratibility to cancer apparently does not consist in a tendency of the animal to develop cancer indiscriminately in any part of the body but only in particular organs. Thus, according to our observations mice with a very high incidence of mammary cancer do not usually develop cancer in any organ but the breast.

Maud Slye whose work along this line is probably the most extensive, is certainly most convincing, reports through the Journal of Cancer Research: The tendency to produce neoplasms, under the right stimulus, is as surely transmitted from generation to generation as is albinism, both in accord with Mendel law. Non-cancer bearing strains can be had without the appearance of cancer; cancer bearing strains can be had with the constant production of cancerous individuals. Inbreeding as such has nothing to do with the transmission of cancer. The potentiality of the germ plasm to produce an individual whose tissues will proliferate to a neoplasm, under a given stimulus, seems to be the thing transmitted. The stimulus seems to be over irritation at the point where the cancer arises. Cancer structures in mice are the same as those in man, and behave the same way, and occur at points in close parallel to those in man.

The first manifestations of the introduction of a cancer strain seems to be sarcomatous; later carcinomatous, the latter attacking the more differentiated tissues as the strain develops, and finally producing a preponderance of multiple tumors. In-breeding of cancerous strains ultimately have a tendency to kill off the strains; out-breeding tends to scatter the strain. The cancerous mice are among the largest, strongest and most vigorously reproductive members of the strain, and only rarely does a weak mouse develop cancer. A decrease of food lowers the death age, lowers the rate of reproduction, but increases deaths from ordinary infection and lowers the cancer rate in that family. An individual with poor normal growth has slow tumor growth. An individual whose growth processes are used in reproduction, shows slow tumor growth. An individual of good growth power whose normal growth processes are not being used, shows rapid growth of neoplasms. Infections take the weak; cancer takes the strong. Reduction of food increases infectability, and lowers cancer rate. Vigorous growth increases cancer rate, lowers infection rate. Slight infection kills a pregnant mouse, but tumor growth is

slackened by pregnancy. Cancer occurs only in cancer strain; infections occur in any strain. Infections spread in one or two other cages, cancer does not spread in the same cage nor to other cages by contact. Mice fed on infected mice become infected, but mice do not contract cancer by feeding on dead cancerous mice. Control mice fed on cancer material do not contract cancer. Cancer is a disease of middle and advanced age when normal growth processes are confined to regeneration and reproduction; infections are diseases of early life when growth processes are accretions in quantity and complexity. Cancer differs from infection since it follows the laws of heredity and since it can be bred into or out of a strain at will.

Since cancer is transmitted rather as a tendency to occur from a given provocation, and over irritation, the elimination of over irritation in one cancer ancestry should materially lower the rate, and the eugenic control of mating so that cancer shall not be potential in both, should also very materially decrease the incidence of human cancer.

THE PREMATURE CONTRACTION.*

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The premature contraction is a response of the heart to a stimulus that develops outside of the site of the origin of the normal cardiac impulse. The mechanism of this disorder is best understood when certain features of the normal cardiac action are borne in mind.

The Origin and Transmission of the Normal Cardiac Impulse. The normal cardiac impulse is generated and transmitted by structures of specialized muscle tissue. These structures are known as the sino-auricular node, the auriculo-ventricular node, the auriculo-ventricular bundle and its branches. The sino-auricular node is imbedded in the wall of the right auricular appendage. The auriculo-ventricular node lies in the posterior wall of the right auricle near the interauricular septum. The latter node marks the beginning of the auriculo-ventricular bundle. This bundle proceeds downward and forward to the membranous portion of the interventricular septum. Here it divides into two branches, one going to each of the ventricles. These branches divide and subdivide into numerous subdivisions which connect with the ventricular musculature. The two nodes and the main bundle are supplied by the vagi and sympathetic nerves.

The physiological cardiac impulse develops in the sino-auricular node at regular intervals of about the rate of 72 per minute. The rate at which they form is influenced by the vagi and sympathetic nerves. The former inhibits and the latter accelerates. These impulses are transmitted over the auricles to the auriculo-ventricular node and then pass over the auriculo-ventricular bundle and its branches to the ventricles. The contraction of the auricles is thus followed by a rhythmical contraction of the ventricles.

The Characteristics of the Premature Contraction. The impulse which produces the premature beat differs from the physiological in two important respects. It develops very rapidly and has a tendency not to repeat itself. The former makes it possible for the premature contraction to interrupt the normal rhythm. The latter accounts for its usual appearane at irregular intervals. When the normal cardiac action is disturbed by this atypical contraction the ventricles are in a refractory state at the time the impulse arrives from the sino-auricular node and therefore do not respond. They thus wait for the next normal impulse. The characteristic features of the premature contraction is therefore its early appearance and the pause that follows. They may originate in the auricles, the ventricles or occasionally the junctional tissue between these chambers.

Etiology. The premature contraction may be produced experimentally by mechanical or electrical stimulation of the auricles or the ventricles. They appear in great numbers following the ligation of the branches of the coronary arteries. They are more numerous on the first and second day following the operation. They often occur in runs of three to five or even more and may even submerge the normal cardiac rhythm and the animals die from cardiac failure. The latter condition is then known as simple paroxysmal tachycardia. Those animals that survived the operation had premature contractions at intervals until autopsy. Here this disorder was associated with known lesions of the myocardium.

The premature beat occurs at all ages. It is, however, most common during the later years of

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life. Sixty-four (57%) of the 112 cases reported by Lewis were between 40 and 70 years old. The frequency gradually increased during the fourth, fifth and sixth decades of life. In our series of 81 cases, 50 (61.7%) were above 40. The incidence was heaviest between the ages of 50 and 60.

This disorder is commonly associated with other manifestations of cardiac disease. Eighty-six (76.7%) of those studied by Lewis and sixty-four (79.9%) of our series had evident heart lesions. In 60% of the former and 69% of the latter the cardiac lesion was chronic degenerative in character. It would thus seem that the frequent association of the premature contraction with chronic myocardial lesions would in a large measure explain the high incidence of this disorder in the later years of life.

The premature beat is not uncommonly noted during the course of acute infectious diseases, as diphtheria, scarlet fever, rheumatic fever, pneumonia or even acute tonsillitis. In our series they appeared during pneumonia in two, rheumatic fever in two and streptococcus sore throat in one. In three they were associated with other cardiac symptoms.

Seventeen (20%) of our cases had no other evidence of cardiac disease. Eight were highly neurotic and complained of gastro-intestinal symptoms. Two smoked excessively. It is known that gastro-intestinal disorders and excessive smoking may influence the production of premature contractions. The method is, however, not understood.

Digitalis and its allies are at times responsible for this disorder. It appears when the subject is under the full influence of the drugs and is considered an indication for either the withdrawal or a decrease in the size of the dose.

The frequency of the premature contraction may be influenced by a number of things. They frequently drop out as the heart rate is increased and are rarely present with a rate of 120 per minute. They are usually not noted during exercise, excitement, or at the time of high temperature. Under these conditions the rate of normal cardiac impulse formation is markedly accelerated and time is not permitted for the premature beat to interrupt the rhythm. There are a few instances, however, in which this disorder occurs during exercise. This phenomena is usually indicative of a weak myocardium and is probably due to the stretching of the musculature. Those who are subject to these atypical contractions of the heart may be able to produce them by such acts as swallowing or holding the breath. They are often more frequent after meals or after retiring at night.

Symptoms. In many instances the subject is not conscious of the premature beat. Those who have symptoms often complain of palpitation. If this symptom is more carefully analyzed they may tell you that the heart seems to skip a beat or it appears to jump or even turn over. These sensations are often associated with a feeling of depression in the chest. If several premature contractions come at short intervals the subject may feel faint. These symptoms are apt to appear after a full meal or after retiring for the night or after excessive smoking. Those who have a hypersensitive nervous system may become very much concerned about themselves and fear that they have a very serious heart disease.

Diagnosis. The diagnosis can be made in the majority of the instances by the ordinary clinical means. An occasional skip is noted in the radial pulse. On auscultation the premature beat comes early and is followed by a pause. During the interval between the appearance of these atypical contractions the rhythm is regular. They may or may not raise the aortic valves. This determines whether they produce one or two tones. In the former the premature contraction with the preceding normal one produce a group of four tones and in the latter a group of three. Occasionally this disorder may occur at regular intervals and replace every second or third normal contraction. In the former the tones will be grouped in threes or fours and in the latter two tones will alternate with groups of threes or fours.

Murmurs that may be present are often modified at the time of the premature beat. The systolic mitral murmur is usually short and may be absent. The aortic systolic and diastolic murmurs are present in these instances in which the aortic valves are raised. The presystolic murmur of mitral stenosis is not heard.

In those in which the premature contraction comes in at frequent and irregular intervals the resulting cardiac rhythm may seem very irregular, and may be mistaken for auricular fibrillation. Under these circumstances exercise is often helpful in making the diagnosis. The premature con-

traction usually drops out as the heart rate is accelerated. In auricular fibrillation, however, the irregularity is even more marked. In some the differentiation may have to be made by the polygraph or the electrocardiograph.

Relation to Other Cardiac Irregularities. The premature contraction is a stepping stone to the more serious cardiac irregularities. Mechanical stimulation of the auricles of the laboratory animal will produce the premature beat. Further stimulation produces runs or premature contractions or small attacks of simple paroxysmal tachycardia. If the stimulation is still continued the auricles may pass into auricular flutter or fibrillation. It may thus be shown experimentally that the premature contraction is the initial stage in the production of paroxysmal tachycardia, auricular flutter and fibrillation.

Those who have simple paroxysmal tachycardia invariably have isolated premature beats between the attacks. The same is true of those that have transient attacks of auricular flutter or fibrillation. When the auricular premature contractions occur at frequent intervals we may be justified in suspecting the possible onset of either of the above types of cardiac disorder.

Clinical Significance. The premature contraction occurs most frequently during the later years of life and is commonly associated with evident changes in the myocardium. It may be one of the first manifestations of cardiac involvement during the course of acute infectious diseases. When they are numerous the possibility of the onset of the graver forms of irregularities may be considered. There are many instances in which the premature beat may appear at intervals without any apparent change in the heart. While this disorder is probably always associated with some change in the cardiac tissue, yet the pathology may seemingly be insignificant. The frequent occurrence of the premature contraction in individuals without other signs and symptoms of heart disease has led some to disregard this disorder. In the light of the frequent association of this condition with cardiac disease, it would seem that a conservative stand should be taken. Possibly those in which the premature beat is the only cardiac symptom should be examined from time to time to be sure that other possible developments are not overlooked.

Treatment. In those in whom the premature beat is associated with more serious symptoms of cardiac disease the underlying condition should receive attention. When this irregularity is the only symptom and if after re-examinations, there are no further developments, the outlook is good. The subject may be assured that he has no serious cardiac disease. Those who have an unstable nervous system may need further assurance. There is no indication for the restriction of exercise. The premature contraction may disappear after the diet and habits are regulated. Drugs do not seem to influence their prevalence. Digitalis is not indicated. Bromide may be helpful at times in those nervous individuals in whom the symptoms are distressing.

PHYSIO-THERAPEUTIC TREATMENT IN WAR INJURIES AND INDUSTRIAL ACCIDENTS.*

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The term Physio-therapy is a new one in medical nomenclature. Within recent years the word has been used to include several forms of treatment, all employing natural methods, or purely physical means, without medicaments, all of these methods having in view the functional restoration of the disabled parts. Physio-therapeutic practice has been in constant use in the hospitals of France, England, Canada and the United States since the beginning of the war in 1914, and improved methods have been from time to time introduced into nearly all military hospitals. The forms of treatment included under physio-therapy have universally come to be recognized as essential in most post-operative cases. The period of convalescence is considerably reduced by the manipulation of massage, passive exercise, etc.

Briefly, physio-therapeutic treatment may be summed up under several headings:

1. *Massage,* in its various forms including *effleurage,* or light stroking; *petrissage,* or deep kneading; and *tapotement,* or hacking, percussing, striking with the open hand, etc. Under the head-

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ing of massage may be included the *passive exercise* of muscular tissues, because the chief and most striking effect of massage is brought about by its similarity to exercise and its action as a substitute therefor.

GENERAL AND LOCAL ACTIVE AND PASSIVE EXERCISES.

Exercise is a powerful therapeutic agent. In its wider and more comprehensive application, it is the most valuable form of treatment in physio-therapeutic practice. Since functional restoration is the aim, exercise is a fundamental factor underlying practically all the other forms of treatment that have been mentioned. Not only do weakened and disused muscles require exercise for restoration of strength and function, but there is need of actual muscular re-education. In the handicap of war injuries, groups of muscles must of necessity work in unusual ways, and must acquire new co-ordinations to adjust muscular contraction to changed conditions. These conditions are constantly observed in the cases of loss of an arm, hand, fingers, or leg; and the muscular training must often fit muscles on the left side to do the former work of those more accurately trained muscles of the right side, which may have been lost or disabled.

Electro-therapy. Under this heading is included the various forms of electric stimulation applied to muscular tissue; the Galvanic and Faradic Currents, the Static Machines, High Frequency Apparatus, the Ultra-Violet Sun Lamps, etc. The greatest value of electric stimulation of muscle undoubtedly lies in the fact that it throws the muscular tissue into a state of contraction, and hence induces *exercise,* when voluntary movement is limited or lost.

RADIANT HEAT AND LIGHT.

Under this heading may be mentioned the various forms of apparatus for baking, and the local application of dry heat, the electric light cabinet baths, etc., all of these forms producing hyperaemia, and stimulating peripheral, as well as general, circulation.

Hydrotherapy, or the application of water, hot or cold, the various forms of douches and sprays, continuous tub baths, sitz baths, swimming pools, whirlpool baths for arms and legs, hot packs, etc. The convenient and soothing application of *heat* is well administered by the various forms of hydro-therapy.

Psycho-therapeutic treatment, i. e., mental suggestion, encouragement, and the habitual establishment of a hopeful, cheerful attitude, is of such fundamental importance, that the writer is constrained to add this form of treatment to the usually accepted list of physio-therapeutic measures. It is of the utmost value in all cases.

These itemized components of physio-therapy will be discussed separately and their values indicated specifically. It may be said that these forms of treatment are all simple in their nature, the physiological results are well known to the Medical Profession, and yet each of the forms mentioned are often viewed with suspicion, and seldom used in actual practice. The reason perhaps lies in the fact that ignorant charlatans and impostors have exploited many, if not all, of these forms of treatment, as panacea for every ill, and have done so purely for advertising and commercial purposes. Hence the medical profession as a whole has neglected certain very valuable means of assisting nature in her work of repair. Certainly all that we can claim for physio-therapy is that we are able by these methods to place an injured part in most favorable condition for natural repair and restoration to health and function. None of the physio-therapy methods *cure:* all are adjuvants to other forms of treatment and to the *"Vis Medicatrix Nature".*

THE APPLICATION OF MASSAGE IN PHYSIO-THERAPY.

Massage is one of the oldest forms of mechanical treatment; its physiological effects are well known, and need not be emphasized in the paper. Its greatest use in physio-therapy is in producing and conserving muscle tone. By its stimulation of muscle tissue, actual fibrous degeneration is prevented, the nutrition and circulation of the muscle is increased, and its beneficial effects are in other ways far reaching. In peripheral nerve paralysis, the application of massage is well nigh indispensable. Its mechanical aid to the circulation is very considerable; it is a potent factor in influencing nutritional changes.

One of the most frequent uses of massage in war injuries is in the treatment of scar tissue, which is often thick, adherent to underlying bony or other tissue, and often so contracted as to seriously limit

movement of joints. Massage is always best applied after the initial application of some of the forms of heat (baking, hot packs, whirlpool baths, etc.), and by gradually increasing the force of the application, cicatricial tissue may be remarkably softened and stretched, and loosened from the underlying tissues. Areas of fibrosis may also be greatly reduced by the persistent application of massage. Effusions, especially around joints, may be decidedly reduced by the application of heat, followed by massage. Massage is a valuable agent also, to prevent the formation of adhesions; hence its use in sprains and similar injuries.

The increased circulation caused by massage is a factor in the healing of sluggish ulcers and chronic unhealed wounds. Firm manipulation of the marginal skin hastens the normal healing process by stimulation of the circulation, and the ulcer is placed in the best position for healing.

TREATMENT BY GENERAL AND LOCAL PASSIVE AND ACTIVE EXERCISES.

Passive exercise may be defined as those movements of muscles and joints which are produced by the application of external force (usually the hands of a masseur, or operator), and not by the voluntary effort of the patient himself. The normal range of movements of joints is brought about by the manipulation, and thus the joint is kept in action and in condition favoring functional use. Its possibility of motion is thus preserved, the fibrous ankylosis of disuse prevented, and when the power of volutary muscular action is restored, the joint is easily and quickly returned to its normal function. Passive exercise is valuable in some forms of paralysis, in which voluntary muscle action is inhibited. It serves to maintain muscle tone, and to increase the circulation and nutrition, not only of muscular tissue, but also of ligaments and tendons and joint structures as well. When fibrous ankyloses have occurred, strong passive exercises, or forcible manipulations and stretchings are often required, in order that adhesions may be gradually broken down and the normal excursion of the joint movements may be restored.

A degree of forcible manipulation and stretching is often necessary. Scar tissues and fibrous adhesions generally yield to this form of treatment, which in some cases must be continued over considerable periods of time. Bony ankylosis or mechanical obstructions cannot be greatly benefitted by such means. In decided cases of fibrous adhesions around joints, surgical interference is often necessary, and the adhesions should be broken down under an anesthetic. Thus in a few minutes results may be obtained which could not be produced by forcible passive exercises, even though long continued.

Forcible passive exercises are always contra-indicated in inflammatory conditions, likewise in cases in which there are large areas of imperfectly organized and freshly grown scar tissue. The frequent stretching and tearing of such tissue causes an increased proliferation of the fibroblasts, with thickening and effusion and perhaps increased fibrous adhesion. From long disuse of muscles, and the restricted position of joints caused by the wearing of splints, casts and slings, the muscles themselves tend to become shortened and concontracted. Passive exercises are indicated in such cases, in order that the muscle may be restored to its normal function. Massage applied to the stretched muscle is often of great value.

Active exercises are those muscular movements performed by the voluntary action of the patient himself. They may be *free exercises* (i. e. movements without the use of weights or apparatus), or exercises with apparatus (chest weight, dumb bells, indian clubs, medicine balls, etc.) or *resistive exercises,* in which the patient performs muscular work, against the resistance of an operator. Each of these forms of exercise are exceedingly valuable, and should be included in large measure in physio-therapeutic practice. Treatment by *active exercises* forms a most important item in all physio-therapy. The nerves and brain are of course involved, and a certain psychic element of value enters into this form of treatment. Voluntary muscular contraction must be employed by the patient: impulses to his muscles must be sent from his own brain and through his own nerves; thus function of brain and nerves is stimulated, and a normal process of stimulus and reaction is set into motion.

Therapeutic exercise should always be supervised; the instructor must understand physiological effects, and be able to direct and encourage his patient as to the correct form of the exercise, as well as its severity and duration. This requires on the part of the instructor not only tact, but a knowledge of the technique. Patients with weakened muscles, stiffened joints, and injured nerves

must often be encouraged and assisted in their movements to an extent which is very considerable.

We may briefly state the objects of voluntary active exercise as follows:

1. To strengthen wasted and disused muscles, in order to bring about a restoration of function. The wasting of muscles from long confinement of limb in splints or casts is often extreme; and in addition, there is nearly always some degree of ankylosis of joints. The combination frequently makes exercises painful, and great will power and persistence on the part of the patient is required. The instructor must constantly remember that only small doses of exercise can be done at first by the weakened muscles; the dosage must be carefully and progressively increased. This requires some fine decisions on the part of the instructor. It is better to under exercise a weakened limb than to overdo the treatment. Muscles which are at first able to function through only a part of their range of movement, must be brought by easy stages to function through their entire range.

2. Muscular coordinations must be increased and restored. After many war injuries, there has been such permanent change in bone and nerve tissue, that practically new coordinations of muscles must be learned. Active exercises rapidly increase these coordinations, and render all movements more efficient. There is especial need of cultivating coordinations of the left side, in case of loss of the right arm, or other disabilities of the right side.

3. In the physio-therapeutic treatment of war injuries, *active recreative exercises* are especially valuable, because of their physic effect. Pleasing exercises in which there is some degree of mental exhilaration, are always more valuable than those forms of mechanical movement in which there is no pleasurable stimulus. For this reason, the various forms of games and plays should always be used when the physical condition of the patient warrants their employment. The rationale of exercise is functional restoration. The mental condition of the patient plays an important part in the physiological effect of the exercise. The gradual restoration of lost muscular movement encourages the patient to renewed effort, and the hope and courage which is developed, play an important part in his speedy restoration.

Apparatus for active exercises. Mechanotherapy is a term applied to the use of mechanical appliances for inducing exercise of various joints, limbs and specialized muscular groups. These devices consist of pulley weights of various sorts, and specially constructed machines which offer resistance to muscular pulls. The usual forms of gymnastic apparatus may be employed; large numbers of specially constructed machines have been developed in the treatment of war injuries. Some of these are valuable, some necessary; but in the main, it may be said that a large variety of appliances are not required, and in most cases not advisable. In the use of these machines, the psychic element is often lacking, and the exercise becomes monotonous and uninteresting, and to that degree diminished in value. Simple gymnastics is all that is necessary. The forms of suspended apparatus, such as rings, bars, trapezes, etc., are valuable, because they afford opportunities for stretching exercises often necessary in contracted joints, ligaments, shortened muscles, and in cases of deficient joint movement in which strong extension and stretching movements are not contra-indicated. The usual form of chest weights, frictional wrist and finger machines, the Swedish stall bars, etc., are all valuable. Medicine balls, basket and volley balls, hurl balls, and similar apparatus, have an important part in the prescription of exercise. Balance boards are very useful to develop or reeducate coordinations in walking and balancing. Exercise of this character should always be given to those who wear artificial legs, since the exercise greatly improves the coordinations of locomotion.

Electro-therapy. Electrical methods have been employed in general medicine for more than half a century. Physicians and physiologists have disagreed as to the efficacy of electric stimulation, some making extravagant claims, others doubting the beneficial effects. The use of electricity in militrary work differs in no respect from its application to general cases in civilian practice, but it is safe to say that its use in this country has been far greater in military hospitals than ever before in the history of electro-therapeutics in America. The immense number of peripheral nerve injuries, with resulting paralyses, have demanded its application. Electric treatment has been of undoubted value in thousands of cases of war injuries. Its chief use, no doubt, has been as a stimulus to maintain the tone of muscles in which the nerve supply has been interrupted. Only

a brief mention of the forms of the application of electricity need be mentioned here.

1. *Faradism.* The faradic, or induced current, is commonly used as a stimulant and general tonic, and may be considered as more mechanical than medicinal in its nature. It produces strong muscular contraction through the medium of the nerves, the electrode being placed on motor points, and the electric stimulation is passed on to all muscular fibers, causing a general contraction very similar to that under the normal nerve impulse. The faradic current is well applied by means of the Bristow Coil; the entrance and withdrawal of the iron core of the apparatus gives the operator full control of the amount of current applied, and the muscular contractions are painless. In short, the value of faradism lies in its power to act as a substitute for normal nervous impulse, and to cause muscular contractions which give to the muscle a normal amount of exercise, when an injured nerve cannot be made voluntarily to convey these impulses. When the nerves are injured or diseased, there is no muscular response from the faradic current.

2. *Galvanism.* The galvanic, or "continuous" current is obtained from a battery of 20 to 40 cells, or from a small motor generator having a maximum voltage of about 60. The galvanic current is uni-directional, and produces no contraction when flowing with uniform strength through the body. It must be varied in strength, or suddenly cut off or switched on, to cause muscular contraction. The current, therefore, must be interrupted, which is done by mechanical means. This is called the "sinusoidal" current, which is stimulant of nerves and muscles.

The galvanic current causes a certain amount of muscular contraction when placed over muscular tissue, even when the nerves are injured or destroyed. The contractions, however, are sluggish and somewhat feeble. The application of this form of current is valuable to maintain muscular tone while there is injury of nerve tissue, and during the process of nerve regeneration after injuries, the galvanic current has decided values in stimulating muscle, and preventing fibrous degeneration.

In addition, the galvanic current has the power of driving certain chemical salts through the tissues. This is called ionic medication, or ionization. Its value in the treatment of war injuries is chiefly in the softening of scar tissue. This softening effect on the tissue is caused by the penetration of certain chemical salts, notably the chlorides, iodides and salicylates. A one or two per cent solution of the required salt is made, and the padding which covers the active electrode is dipped into it.

3. *High frequency.* This is an induced current with enormously high voltage, and low amperage, having a frequency of millions per second. By means of a suitable electrode (usually a glass vacuum electrode), the current may be passed direct to the patient through the electrode, or a metal bar may be grasped in the hands. The rapidity of the oscillations is so great that the patient experiences no sensation or muscular twitches.

In therapeutic practice, it is used in the main for its sedative effects. It has a decided effect on metabolism; general systematic treatment by the high frequency apparatus (Auto-Condensation) is evidently of great value in certain neuroses, especially hysterical, in reducing blood pressure, in nephritis and apoplexy. It has been used with good results in the so-called rheumatic conditions; it has a beneficial effect on chronic cases of arthritis and in these conditions caused by auto-toxaemia.

Diathermy is a modification of the high frequency current. The diathermic current is without contractile effect on muscle, or direct chemical effect on the body fluids. It is used because of its production of heat, which penetrates deeply into the tissues. The heat is generated within the whole area between the electrodes, due to the resistance which the tissues offer to the passage of this form of current. It is opposed to the ordinary high frequency current, in that the voltage is low and the volume of current large. It is of great value in the treatment of joints which are affected by arthritic conditions. It causes a local hyperaemia, and is a good preparation for massage when applied to joints.

4. *Radiant Heat and Light.* The actinic value of the sun's rays, with their chemical and tonic effects is well known. The heat radiated by incandescent electric lights with proper reflectors, acts in much the same way, and may be applied at any time and to any part of the body. The heat causes a hyperaemia, stimulates the skin functions,

and relieves pain. The special "Baking" apparatus used in physio-therapy consists of an adjustable stand, with a hood enclosing the lights. It is much used to stimulate circulation, to relieve painful and swollen joints, to soften scar tissue, to increase the circulation in weakened and impaired muscles, and also as a preparation for massage.

The chief value of the electric light cabinet bath lies in its power to stimulate the peripheral circulation and the sweat glands. This effect is powerfully produced, and the cabinet bath is indicated in all those disorders which require elimination through the sweat glands, i. e., toxaemia, gouty, rheumatic, alcoholic, nephritic, etc. The temperature may be raised within the cabinet to 150-180 degrees. Cold compresses are generally applied to the head during the bath, and the patient should drink water copiously in order to promote free sweating.

The "Alpine" sun lamp is an apparatus for the application of the ultra-violet rays. The intense light is caused by the passage of an electric current through a column of mercury, contained in a quartz tube, a mercuric vapor light. The ultra-violet rays have well known germicidal effects. The lamp is used for general stimulation of the skin, and produces a tan precisely similar to sunburn. Its chief therapeutic application is to skin diseases. It has been tried with good effects on indolent and sluggish granulations, on old ulcers and wounds, etc.

5. *Hydrotherapy.* The application of water to pathological conditions has long been used as a therapeutic measure. Remedial baths are either cooling, or heating, according to the temperature of the water used. *Thermal baths* are those in which the water is about skin temperature; they range usually from 95 degrees to 105 degrees. *Subthermal baths* are those below skin temperature, and range from 90 degree to 50 degrees. *Hyperthermal baths* are hot baths; the temperature of the water may range from 100 degrees to 125 degrees.

Thermal baths may be prolonged for long periods; they are sedative in character, especially when prolonged for an hour or more. This form of bath is used in the "Sedative Pools", a common form of treatment for psycho-neuroses.

Hyperthermal, or hot baths, are of especial value in producing hyperaemia, and increasing the general circulation of the part immersed. Glandular activity of the skin is also increased. A splendid method of applying heat is supplied by the whirlpool baths, much used in war injuries, such as contractures, ankyloses of joints, painful injuries generally. The whirlpool bath is especially useful in softening the scar tissues of stumps, and in increasing the circulation in paralyzed limbs. The bath consists of a vessel, into which jets of water are introduced at an angle so as to produce a rapidly revolving mass of water. The massage of the water itself is stimulating, and on account of the rapid change of the water, a lower temperature may be used, which is productive of the same results as a higher temperature of water which is stationary. This form of bath is an admirable treatment preceding massage.

Subthermal, or cold baths, are used to reduce swellings, contusions, sprains, fracture, etc. They are used also to reduce body temperature in acute febrile conditions, and may be applied either locally, or the whole body may be immersed. Care should be used, however, in the application of cold baths unless the patient is vigorous, and reacts readily from the chilling effects of the water.

Other forms of baths are used to advantage, such as the shower, spray, continuous tub baths, douches, hot and cold, local vapor baths, needle baths, etc. It is not the purpose of this chapter to describe these details. Each has its particular form of advantage, although they differ but little in effects. The value of hydrotherapy consists chiefly in the fact that this form of treatment is easily applied, the results are quick, and often of great relief to the patient.

CHIROPRACTIC CANDOR.

In Butte, Montana, recently there was a convention of "chiropractors." This august assembly was addressed by one of its shining lights—Mr. Palmer, of Davenport, Iowa, "the Fountain Head of Chiropractic." To the local newspapers Mr. Palmer explained:

"Our school back at Davenport is established on a business and not a professional basis," Mr. Palmer said. "It is a business where we manufacture chiropractors. They have got to work just like machinery. A course of salesmanship goes along with their training. We teach them the idea and then we show them how to sell it."

Commendably frank! They *do* work like machinery; from the eyebrows down. The Journal has always held that "chiropractic" is a trade and not a profession; Mr. Palmer's admission makes it unanimous.—*Jour. A. M. A.*, Nov. 6, 1920.

EPIDEMIC ENCEPHALITIS.*

BY ARTHUR W. ROGERS, M. D.,

OCONOMOWOC.

Medical nomenclature presents a number of inane and misleading terms, conspicuous among which we find hysteria. The ancient conception of this disease as being in some mysterious manner connected with the hysterix or uterus is far from our present one. More recently we have been combating the unfortunate term "shell shock", while at present we are endeavoring to disentangle ourselves from the no less unfortunate term lethargic encephalitis, or the "sleeping sickness" of the daily press.

It is scarcely necessary to state that true sleeping sickness is exclusively a disease of the tropics and is always due to one and the same cause—the bite of the tsetse fly. The misnomer, lethargic encephalitis, is due to the fact that the earliest observers of the disease under discussion failed to recognize other forms than the lethargic type. The fact is that only about 60% of these cases fall under this classification.

History — Epidemic encephalitis was written about in Europe in 1712. The present wave seems to have started in Vienna in 1917. Early in 1918, it was in France where several thousand cases had been observed. Up to June 30, 1918, 228 cases had been reported in Great Britian. The first reported American case occurred in New York City, September 4, 1918. By November it was in Texas, Louisiana, and Illinois. The number of reported cases rapidly increased, reaching a maximum of over 60 in March, 1919. After this it rapidly increased in prevalence. The number of cases reported between September, 1918, and July, 1919, was 255. Of this number 88 were in Illinois. The number reported in the Public Health Service weekly reports July 1, 1919, to February 12, 1921, was 579.

The number of cases in Detroit in 1920 was 115, in Chicago 118. Dr. Bassoe of Chicago was the first to report cases in this section. At present new cases are coming to diagnosis and reported daily.

Dr. Wechler in the March Neurological Bulletin reviews 864 cases and reaches some interesting conclusions.

Age incidence—There were 3 cases reported in infants 4 weeks old. The oldest case was that of a man 84 years old. However the greatest number occurred between the 20 and 50 year period.

Sex—The male sex was affected twice as frequently as the female. No occupation or profession was immune and probably plays no part in the incidence of the disease.

Many more cases were reported among the foreign than native born.

Pregnancy—There are records of 22 pregnant women who had encephalitis. Two of these aborted and one had a Caesarian section. One woman was delivered in the 8th month of pregnancy, both mother and child surviving, but no mention is made whether the child showed any lethargic symptoms. Four deaths are reported.

Etiology—The fact that nearly 50% of the cases of encephalitis reported an earlier attack of influenza gave rise to the belief that the same organism or a strain of this organism was responsible for both diseases, but at present the concensus of opinion does not follow this theory. Again its similarity pathologically to poliomyelitis has been noted, but as encephalitis becomes more familiar to us, this resemblance diminishes and we appreciate that it has many different manifestations. At the same time we know that the great majority of cases of poliomyelitis occur in early life.

All the evidence points to a new and as yet undiscovered organism as the specific cause of epidemic encephalitis. This organism apparently finds its way into the blood stream through the naso-pharynx. Cutures have been made from naso-pharyngeal washings and the disease reproduced in rabbits. The same results have been brought about by the use of spinal fluid and blood and an emulsion of the brain from patients who died of encephalitis.

Loewe and Strauss have done most of this work, while Dr. Thalheimer of Columbia Hospital, Milwaukee has also done excellent work along this same line. He reports that from naso-pharyngeal washings and from the spinal fluid of sufferers from epidemic encephalitis he has isolated a filtrable virus which injected into rabbits and guinea pigs has produced the symptoms of the disease and in the dead animal pathological changes characteristic of this disease. This experiment has been carried successfully through several generations

*Read before the Milwaukee Medical Society.

of animals and he believes that this much as to etiology is fully established.

Rosenow is inclined to consider the infective agent a strain of the same germ which produces influenza.

The means by which encephalitis is communicated is still a mooted question, but increasing evidence must cause us to consider the naso-pharyngeal discharge as the offending medium. "In only five instances, a little over half of 1%, has the disease occurred in two members of one family. There are two other incidences but both are doubtful and one of them occurred in a servant of the house. Considering the rarity of the instances, one may well look upon them as accidental, and in view of the practical absence of contagion in hospital cases (two internes have contracted the disease) one may consider the factor of direct transmission as almost negligible."

There are reasons to believe that the source of infection may lie dormant in the naso-pharyngeal passages some weeks before the symptoms of the disease manifest themselves. Again there are a few instances in which an apparent recovery from the malady occurred and some time later the symptoms (and in one case an entirely new type) developed. It is impossible to tell whether this was a recrudescence or an entirely new infection.

Pathology—The most constant necropsy findings of epidemic encephalitis are congestion and edema of the brain, and meningitis. Microscopically, there is an infiltration of the adventitial and perivascular spaces with lymphocytes and plasma cells. These perivascular rings, occurring especially in the nuclei of the brain stem have been considered almost pathognomonic. In short the pathology is that of an acute infiltrative encephalomyelitis. The most marked changes occur about the blood vessels of the thalamus, the cranial nerve nuclei, the floor of the fourth ventricle and in the white substance of the spinal cord.

Symptomatology—The symptoms of epidemic encephalitis are of such protean character that it would be quite impossible in the scope of this paper to consider them all. One authority advances the theory that the variations in symptoms may possibly be due to "individual variations in the relative susceptibility of different levels of the cerebro-spinal axis as from regional exhaustion resulting from prolonged physiologic hyperactivity or from previous disease." Paresthesia, headache and vertigo have been frequently noted as early premonitory symptoms. The pain is severe, lancinating, continuous and usually occipital. It often extends downward along the spine and arms. There is nothing characteristic in the pulse, and temperature seldom registers more than one or two degrees and then only for a few days, as a rule while the disease is being ushered in. It may be normal throughout the disease. Examination of the blood and urine seldom show anything of interest. The spinal fluid when drawn is usually found under some pressure. The increasing of the pressure does not seem to have any relation to the seriousness of the case, whereas it seems to have a connection with the period of the disease itself. Such alterations are more easily found in the beginning and up to the maximum height of the disease. It decreases and disappears in the 3rd and 4th week of illness. The color is always clear. A slight lymphocytosis usually exists. Globulin is usually increased. The slightness of the alterations and their uniformity in all phases of the disease are facts of great importance, especially in view of diagnosis of epidemic encephalitis so that it may be possible to differentiate this disease from the different forms of meningitis, particularly from tubercular and syphilitic meningitis.

Symptoms arising from disturbances of the central nervous system are of the greatest importance, particularly the mid brain, as would be expected from the pathology. Diplopia is generally an early and persistent symptom. Ocular palsies, ptosis and mystagmus are common. Some cases exhibit complete ophthalmoplegia. The pupils are usually equal and regular but frequently react sluggishly to both light and accommodation. One of our cases developed a slurring speech like that seen in general paralysis.

Fundus changes are not common but choked disks and engorged retinal veins have been reported. Unilateral and bilateral facial palsies, paraplegia and monoplegia are the more common types of paralysis recorded. Tremors are common, usually of a coarse and jerking character. One authority has called attention to a rythmic movement of the muscles of the lower abdominal wall, at times scarcely perceptible, but a very common manifestation early in the disease. Ataxia, choreiform and athetoid movements, rigidity and catatonic states are reported by other observers. Abnormal mental states are the rule, varying from

slight drowsiness to profound stupor. In the majority of cases the mind behaves lucidly under stimulation. The patients answer questions lucidly but only after some delay and with apparent effort. They volunteer no information and soon fall back into apparent sleep after questioning ceases. On the contrary, delirium and even maniacal states occur and in some cases both lethargy and delirium occur at different stages of the disease. The face generally gives the impression of listlessness and is devoid of emotional expression. It is frequently compared to that of paralysis agitans, i. e., masklike.

The reflexes may be increased or absent. Organic reflexes as the Babinski, Chaddock, Oppenheim, ankle clonus, etc., occur according to the parts of the nervous system involved. The sphincters are at times affected where the lesion involves the tracts of the spinal cord.

Clinical Forms—Of necessity at this time, no classifications of the different manifestations of this disease can be entirely satisfactory, but clinicians recognize at least ten varieties of epidemic encephalitis, namely: 1. Poliencephalitic; 2, Lethargic; 3, Parkinsonian; 4, Cataleptic or Catatonic; 5, Meningitic; 6, Cerebral; 7, Polyneuritic; 8, Myelitic; 9, Myoclonic; 10, Psychotic. Such a classification conveys an excellent idea of the multiplicity of symptoms this disease may assume.

The duration of the disease is very variable—from a few days in the mildest cases to two to five weeks in those of average severity, and even up to two or more months in those of the severest type. The palsies and tremors sometimes persist for months after all other symptoms disappear. Parksonian residues, ocular manifestations, especially paralysis of accommodation, abnormal involuntary movements, such as tics and tremors, epileptic and psychic or even mental changes frequently are the heritage of the victim of epidemic encephalitis. A few cases take on a chronic form.

In one of our cases which we saw for the first time nearly two years ago there is still evidence of considerable coarse tremor in both hands, although he performs his duties as a farmer.

Undoubtedly there have been a considerable number of unrecognized abortive cases. The mortality of about 20% is seen mostly in those cases which begin with an acute onset and with high fever. There is also a high mortality among the so-called psychopathic, toxic, delirious group as well as those with myoclonic symptoms of meningitic involvement.

Treatment—As would be expected in a disease of such recent occurrence in our midst, the treatment has been a rather unsatisfactory one, being for the most part symptomatic. Delirium and neuritic pains are at times relieved by proper hydrotherapy. Most authorities advise the exhibition of hexamethylenamine. A French writer (Netter) advocates the turpentine fixation abscess. This abscess is produced by injecting 1 or 2 c.c. of old turpentine into the subcutaneous tissue of the abdominal wall, half way between the left ilial spine and the umbilicus. If the first injection does not produce the abscess, a second one may be given in 48 hours. This is indeed a heroic procedure but apparently has borne good results in Netter's hands. Some writers have reported good results from frequent spinal tappings and withdrawal of spinal fluid.

We would like to call your attention briefly to three cases of epidemic encephalitis to illustrate the variability of symptoms.

First—A well nourished man of 27 years; farmer. First complained of a persistent and annoying spasm of the left cremasteric muscle. After this had persisted for several days he experienced severe lancinating pains down both legs. Shortly he was unable to keep awake. I found him in a stupor; pupils even, dilated; both light and accommodation reflexes lost. Superficial reflexes of trunk absent but deep reflexes all much increased. Double Babinski. Slurring speech. When aroused by effort one could scarcely understand his replies, which however, showed a degree of clarity of mind. There were myoclonic movements of all four extremities. He passed through six weeks of lethargy without any new symptoms developing and in four months was again able to do some work, but nearly two years later shows coarse tremors in hands, although able to discharge his duties as a farmer.

Second—Banker, 49. The first manifestation of anything unusual in this case was a euphoric condition in which business judgment was distinctly impaired. I first saw him two weeks after his friends realized that he was not normal. At this time he was alternately voluble and quiet. In the latter phase he was inclined to sleep too much, especially during the day, but at night was very

wide awake and inclined to talk continuously of business matters. He had but little insight but knew he was not himself. He was weak and disinclined to leave his bed. Ate poorly and at times vomited what he did eat. Superficial reflexes were lost and deep reflexes were greatly exaggerated. Pupils were even, regular and sluggish to both light and accommodation. The only paretic condition was a ptosis of left eye lid. Double vision was complained of irregularly, some days being absent entirely. This phenomenon and the shifting reflexes have been explained by localized edemas by some observers. After 8 weeks of the above symptoms this patient made an uneventful and complete recovery.

Third—Male, 37. Merchant. Never sick until present attack, January 26, 1921. Lost interest in work. Became listless and soon unable to keep awake. Temperature 100 for three days. Complained of blurring of vision and severe occiptal pain, extending down neck and left arm. Excessive expectoration and slurring speech and laterly nystagmus noted. After three weeks of these symptoms, condition shifted in one week to one of considerable euphoria. Very voluble and unable to sleep. This case was referred to me March 13, as a possible paretic. I found the deep reflexes all greatly exaggerated, a variable double Babinski. Pupils dilated and even but sluggish to both light and accommodation. Speech and hand writing suggested paresis. Examination of blood and spinal fluid negative. An analysis of the mental condition showed the intellectual powers intact. He was somewhat explosive and voluble but not expansive. On the last two points the differential diagnosis rested. This patient developed a complete ophthalmoplegia, a paraplegia as well as a paresis of the lips and muscles of deglutition and back muscles so that he could not hold body erect. The face became masklike and the bladder and bowel sphincters were involved. Lethargy was again very marked.

At the present time, May 26, this patient has made a recovery on all but these points—slight impairment of light reflex; deep reflex 3 plus; slight slurring of speech. Mentally he is quite euphoric and very voluble when awake but sleeps well. He presents a somewhat childlike attitude in his mental makeup. Only time will tell just how far this case will come back, but improvement is noticeable each week.

THE INTERNAL SECRETIONS OF THE SKIN.*

BY KARL W. DOEGE, M. D., F. A. C. S.,

MARSHFIELD CLINIC.

MARSHFIELD, WISCONSIN.

Mechanotherapy as a method of treatment of disease is being adopted more and more by medical men all over the world. While formerly used mainly by masseurs, Swedish movement experts, in watercure sanatoria, by osteopaths, chiropractors, bone-setting specialists, electric-belt vendors, and what-not, and used by them for better or for worse,—for the benefit of the sick or for their exploitation, — the medical man now also has awakened to the real merit of these various methods. Medical schools now teach mechanotherapy to their students; and the number of its subdivisions or departments and the multiplicity of its applications are increasing daily. Swedish movement is directed mainly to the joints and deep muscles, electrotherapy to the nervous system; while hydrotherapy, heliotherapy, thermotherapy, and general massage have the skin as the medium upon which their efforts are exerted and through which their therapeutic results are obtained. Strictly speaking, every form of mechanotherapy is primarily applicable only by way of the skin; even if aimed at the deeper tissues its route of application must be transdermal.

As surgeons we have long been cognizant of the value of external applications in local infections, not so much because we thought of the skin and its function as a therapeutic agent, but more because we hoped to derive, through absorption, a local or a systemic effect from the drugs which we had incorporated into those applications. We refer to ointments, liniments, and various moist antiseptic dressings. Empirically we know that irritation of the skin enhanced the value of our medicament, and, therefore, ointments and liniments were directed to be applied by friction or prolonged rubbing, and antiseptic applications are generally ordered as hot as can be borne.

Thermotherapy as applied to limbs by dry baking brings the skin to a high heat and induces redness and a rapidly changing blood supply.

*Presented before the Soo Railway Surgical Association at its annual meeting in Minneapolis, Minn., December 17, 1920.

Hydrotherapy when used hot has the same effect; when applied cold, it relies upon the cutaneous reaction to produce congestion of the skin surface. Heliotherapy and radiotherapy, as applied in the form of general light baths, can exert their influence through the skin only. The deeper tissues are not affected, for it has been ascertained that the short rays of the sun and artificial light have but a very limited penetrating power, and do not reach the deeper structures at all. General massage exerts a constant dermal irritation, and, where properly carried out, leaves the skin with an increased flow of active circulation. The general sanitary cleansing bath, the mud bath, the cold bath in typhoid and other fevers—all have the same dermal effect; and the conspicuous part the skin plays in the profuse perspiration during the crises of pneumonias and in the manifestations of exanthematous diseases, such as measles and scarlatina—all indicate an intense participation of the skin in the pathologic processes and suggest a much greater importance of the skin and its functions than that of mere external protection.

From an anatomical and histological point of view and bearing in mind the tremendous epithelial surface of the rete malpighii, its very intimate relation to the capillary circulation, its abundant nerve supply, as well as its extensive system of lymph spaces, it would seem that other, perhaps more important, functions than that of excretion and mechanical protection might pertain to this tissue.

In considering and dilating upon the well-known fact that rabbits whose skins have been completely covered by an impervious varnish die promptly, and that extensive burns in man may produce death, the physiologist Kreidl suggests that an existence of internal secretion of the skin might be assumed. He says, "The loss of function of large skin surfaces by burns or by varnishing might influence the basal rate of metabolism through default of such part of the metabolic processes as are normally going on in the affected portions of the skin." Here one might conceive that the living skin has the function, either of furnishing certain substances necessary for the basal metabolism, or to paralyze certain toxins by the product of these substances.

Whether its extensive inner surface constitutes the laboratory where metabolic processes go on, changing or destroying toxic agents, or whether it- elaborates a secretion, necessary for proper metabolism, similar to the secretions of the thyroid, adrenals, and gonads must for the present still be left undecided. The hypothetical assumption of the existence of an internal secretion of the skin is made probable, and the existence of a metabolic and biologic function is made positive, by the contemplation of certain facts. For instance, not only does a close or perhaps compensatory dependency exist between the functions of the various ductless glands themselves, such as thyroids and adrenals, pituitary body and gonads, but there is evidence also of the existence of an intimate connection between these glands of internal secretion and the skin. Clinical facts make this evident. Perhaps the most familiar examples are the appearance of myxedema with the loss of thyroid function; the dependency of certain skin eruptions or pigmentations upon the sexual glands, pregnancy, puberty and the climateric period; the appearance of the bluish discoloration of the skin in Addison's disease, an affection of the adrenals.

Again, the fact that many infectious diseases such as measles, diphtheria, smallpox, spotted fever, and syphilis run their course with a conspicuous and essential involvement of the skin is certainly not without a deeper significance, and points straight to the probable fact that the skin performs an important function in the overcoming of these affections. The established impression that measles and the scarlatina rash must "come out thoroughly" to prevent serious involvement of the inner organs, and that an abundant and well-marked secondary and tertiary lesion of the skin in syphilis is a material safeguard against the later affections of the nervous system in this disease, would suggest and justify the assumption of a biologic protective function in the skin.

That such biologic function actually exists has recently been most beautifully proven by B. Bloch. To give a comprehensive picture of his experiments, it is necessary briefly to refer to what is known as allergy, allergic reaction or allergic immunity. If an animal or person is injected with horse serum nothing unusual may happen until after a period of from eight to twelve days, when a reaction known as serum-sickness, recognized by local redness at the site

of infection, urticaria, joint-pain, glandular swelling, and fever, may occur. After subsidence of these symptoms the animal apparently returns to the normal, that is, to all appearances the animal is as it was before; this return to normal or former state is only an apparent one. In reality a far-reaching revulsion has occurred, for if reinjected after weeks or even months the above-mentioned reaction, instead of occurring in eight or twelve days, as before, takes place at once or within a few days,—in other words, the phenomenon of an immediate or hastened reaction, local and general, appears, denoting the existence of a hypersensitiveness of these animals or persons as a result of the former injection. If injected again and over again, the reaction will appear still more promptly and will change in character from an at first violent to a later much milder manifestation. This phenomenom of hypersensitiveness of hastened and changed reaction is known as "allergy" and constitutes the first stages of a developing immunity. It is important for our subject to note that in a large number of infections, such as trichophytosis tuberculosis, and syphilis, the manifestation of this allergic reaction is first and mainly noted in the skin, forming the basis of von Pirquet's reaction in tuberculosis, and of the luetin reaction of Noguchi in syphilis.

"This allergic reaction to the poison constitutes the first and visible phenomenon indicating the existence of the disease, and is at the same time the very means by which nature attempts to cure. The final aim of the inflammatory reaction is nothing else but the destruction and expulsion of the invading micro-organism. The ability to show allergic reaction remains in the body long after the disease that caused it has disappeared. In trichophytosis, for instance, it remains for years, and can be demonstrated even tens of years later; and the same holds goods for variola and for tuberculosis."

To return to Bloch's experiment. He selected a fungus, the trichophyton, and infected the skin of an animal or man. During five to eight days no change took place. Only after the lapse of some time, that is, after the period of incubation, at the site of vaccination a rapidly developing infection took place, which, after running its course receded and the skin returned to the normal. If injected for a second time, the reaction takes place quicker, and is more acute than the first time, and owing to the increased hyper-sensitiveness to the poison it is much stormier, though shorter in duration. The system overcomes the toxin much quicker and after oft-repeated vaccination the reaction becomes still shorter until at last complete immunity has resulted and no reaction whatever takes place.

It would, of course, be of fundamental importance if we could locate the source and site of this allergic principle, if we could state which organ, or what complex of organs, is responsible for this allergic and immunizing faculty. It is to be regretted that this problem in general has not as yet been solved. We do know, for instance, that in diphtheria and tetanus the immunizing substance is formed in the blood, that is, it is serogenetic. For trichophytosis, however, Bloch has experimentally proven it to be in the cells of the skin itself, that it is histiogenetic. He transplanted a portion of the skin of an individual that had once been experimentally infected with the fungus,—that is, possessed allergic reaction,—onto the body surface of a healthy, not previously infected individual, and was actually able thus to transfer the allergic immunity and to demonstrate its presence. This experiment is fundamental and epoch-making as far as the site of the biologic function of the skin is concerned. It is evident that it is the skin, the pidermic, that possessed the allergic faculty. Thus Bloch has proven and demonstrated beyond cavil that the skin possesses an important biologic protective function.

It is, therefore, not surprising, but is as it should be, that the peeling of scarlet fever, the furfuraceous débris of the skin, should not be infectious as it once was thought to be. It may even contain certain valuable biologic principles, which, when fed or injected, might produce an immunity to this disease.

What has been said of the trichophytosis we have reasons to believe holds good also in tuberculosis, where the allergic reaction of von Pirquet is so easily demonstrated. The same can be said of syphilis.

The value of heliotherapy, sun baths, and Alpine light in the treatment of tuberculosis by stimulating the skin and its biologic function (or internal secretion, if you wish) thus becomes not only apparent, but also important, and demands

of us as surgeons that we should utilize and exploit it.

As regards syphilis, it may be well worth while also shortly to emphasize the importance of the biologic function of the skin (or shall we say of the internal secretion?) in this polymorphic affection. It has often been noted by men of authority that patients with luetic nervous affections, such as tabes, have had but remarkably little involvement of the skin during the early course of their infection; and, conversely, it has been remarked that in countries where this disease is so frequent as to be almost endemic, nervous lesions are conspicuous by their absence. This antagonistic relationship between extensive early or secondary and tertiary lesions of the skin on the one hand, and the occurrence of the late luetic nervous manifestations on the other, may readily be explained by the assumption that the early and persistent location of the spirochetes in the skin causing well-marked secondary lesions has served to develop in it a sufficient quantity of immunizing substances to appreciably reduce the number and virulence of the germs, thus safeguarding the inner organs, especially the nervous system.

Much more might be said in this connection; however, it is our aim principally to draw attention to a function of the skin far more important than that of exertion and mechanical protection. Having proven the existence of a biologic protective function it is not at all unlikely that such methods of treatment as heliotherapy, Alpine light, massage and thermotherapy exert their beneficent effect mainly by stimulating the skin in some way to an increased exercise of its biologic principle or to a more profuse production of what we assume to be an internal secretion. Assuming this to be true and recognizing its immense potential value we must as surgeons look upon the skin with a great deal more of respect, and must for this reason endeavor to utilize and exploit the principles of mechanotherapy to a much greater extent than has been in vogue formerly.

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TINCTURE OF DIGITALIS AND THE INFUSION IN THERAPEUTICS.

Tincture of digitalis was prepared by Soma Weiss and Robert A. Hatcher, New York (Journal A. M. A., Feb. 19, 1921), the marc of which was dried and used in the preparation of an infusion: this infusion of marc was tested on cats and found to be inert, showing that all of the active water-soluble principles of the leaf are extracted during the percolation for making the tincture. This method of testing the marc affords a delicate means of testing the degree to which the active water-soluble principles are extracted during the percolation of the drug. There is no essential difference in the amounts of the saponin bodies present in the tincture and in the infusion prepared from equal weights of the leaf, and therapeutic doses of digitalis do not contain enough to induce any undesired effects. Infusions of digitalis were prepared in different ways. In each case the marc was washed and dried, after which it was used for the preparation of tincture, and this tincture was tested on cats in order to determine to what extent the active principles had been extracted during the preparation of the infusion. The official infusion does not represent the drug completely; hence the standardization of the leaf does not insure uniformity in activity of the infusion. The variability of the infusion is at the expense of the more absorbable of the active principles. The infusion prepared according to the method described represents the activities of the leaf completely; hence it permits of uniformity when a standardized powder is used for making it. It may be used in place of the tincture in doses just ten times the volume of those of the latter, and it becomes a matter of indifference, so far as therapeutic effects are concerned, which is used. The authors have been unable to discover any experimental evidence to support the view, still held by many, that there is a necessary qualitative difference between the actions of the tincture and those of the infusion of digitalis, even when the latter is prepared properly. An infusion of digitalis prepared in the manner recommended, and kept in completely filled and hermetically sealed bottles for more than two years and five months, retained its activity unimpaired, as shown by the results of tests on cats and by the therapeutic effects on man.

U. S. TRAINING SCHOOL FOR NURSES.

A training school for nurses of the U. S. Public Health Service is to be established by the Surgeon General which will offer to women desiring to take up the profession of nursing a course of study leading to a diploma and an opportunity to assist in caring for disabled military patients.

The headquarters of the school is in the office of the Surgeon General, Washington, D. C. Training will be given in certain hospitals in the Service. Schools will be open on Sept. 1 at Fort McHenry in Baltimore and at Fox Hills, Staten Island, N. Y. The Service hospitals provide experience in surgical nursing, including orthopedic, eye, nose and throat; medical, including

communicable, nervous, and mental diseases; X-ray and laboratory technique; experience in the diseases of children, and public health nursing. Gynecology and obstetrics will be provided in the second or third year of the course through affiliations with civilian hospitals. Lectures, recitations, and laboratory work will be given in the required subjects in each hospital training school.

The course will be three years. A credit of nine months, or approximately an academic year, will be given to graduates of accredited colleges. Credit of three or more months will be given to students who have had two or more years in college or in approved technical schools that include the prescribed courses in the sciences. The three years will be divided into a probationary term of four months, a junior year of eight months, and an intermediate and senior year of twelve months each. Vacations of one month each year will be granted. Hours of duty on the ward will be arranged with reference to the requirements of the class work. Throughout the probationary first four months they will not exceed six hours daily, and thereafter, eight hours.

Candidates should make application in person or writing, to the Surgeon General, U. S. Public Health Service, Washington, D. C. Special consideration will be given to candidates who have taken the course in Elementary Hygiene and Home Care of the Sick with the Red Cross or who served as nurses and aides in army and civilian hospitals throughout the war. Candidates must be between 21 and 35 years of age, must pass satisfactory physical examination, and must be graduates of a recognized high school or present evidence of an educational equivalent.

No tuition fee will be required. Students will be provided with quarters, subsistence, laundry and text books through the course. They must provide their own uniforms. A monthly allowance of thirty dollars for the first two years and fifty dollars for the third year to meet these and other school expenses will be made. Reasonable medical treatment will be supplied.

Connection between the student and the school may be severed by either side at any time during the period of training. Students who complete the prescribed course and pass physical examination become members of the regular U. S. Public Health Service Nurse Corps. All students except those to whom credit for collegiate or technical work have been given will be eligible for registration in any State except those requiring three full years in a hospital. They will also be eligible for membership in the American Nurse Association and other organizations, for enrollment in the nursing service of the American Red Cross, and for post-graduate courses in the teaching, administrative, and public health fields.

PROGNOSIS OF NEPHRITIS IN CHILDHOOD.

A study was undertaken by Richard F. James, Boston (Journal A. M. A., Feb. 19, 1921) to determine (1) how many patients that had had acute nephritis recovered entirely; (2) how many developed the chronic type; (3) the present condition of the chronic type, and (4) the ultimate prognosis. Seventy children who had had nephritis the last sixteen years were examined. The examination included the cardio-vascular system, hemoglobin, urinalysis, present health of the child, record of the patient's condition while under treatment and the etiology. Nine of the sixty-seven cases, or 13.3 per cent, terminated in the chronic type, and of these only two could be considered severe. All of the sixty-seven patients who had had acute nephritis are living under normal conditions, on ordinary diet; and in every case the urine was found to be negative. Of twelve fatal acute exudative cases, one patient had an associated tuberculous peritonitis and one died of terminal pneumonia. Ten had general edema, two died of uremic convulsions; one patient having acute suppression of urine died following a decapsulation; one had associated acidosis. The point to be noted is that in none of the cases of the hemorrhagic type without edema did the patients die in the acute stage of the disease. In the group of twelve chronic cases, eight had albuminuria, four did not. In the urine of two patients, seen two years after discharge, a few red blood cells were found under high power. James believes that many patients with mild chronic nephritis recover. Diseased portions may recover even if there is considerable degeneration, and neighboring portions of the kidney may hypertrophy and carry on the extra work. In other words, an anatomically imperfect kidney can function efficiently. Many children will stand severe infections without acute exacerbations of nephritis, but they are more prone to follow upper respiratory infections. For this reason all foci of infection should be treated, such as diseased tonsils, carious teeth and otitis media (acute or chronic). They act as a reservoir of toxic material which the kidneys drain.

PELLAGRA AND INCOME VARY INVERSELY.

That pellagra varies inversely with the family income in the cotton-mill villages of South Carolina is the conclusion drawn after a three-year study of the U. S. Public Health Service. This is the first reported study in which the long-suspected relation of poverty and pellagra is definitely measured.

As the income fell the disease was found to increase and to affect more and more other members of the same family. As the income rose, the disease decreased and was rarely found in families that enjoyed the highest incomes, even though this highest was still quite low.

Differences among families with the same incomes are attributed by the report to differences in the expenditures for food, intelligence of the house-wife, and ownership of cows, gardens, etc. Differences among villages which were economically similar are attributed to differences in the availability and condition of food in local markets.

A recent statement by one of the largest life insurance companies in the United States indicates that the food standard of Southern wage earners must have improved remarkably of late, for the death rate from pellagra has fallen from 6.7 per 100,000 in 1915 to 2.3 in 1919.

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EDITORIALS

HOME-COMING MEETING.

YOUR State Medical Society will celebrate its seventy-fifth birthday at Milwaukee, September fifth to ninth, by a "Home-Coming" meeting which all former Wisconsin men are invited and urged to attend. Of course, you will be there, but your assistance in inviting former Badgers now living outside of the State is needed. Will you not write them and send in their names at once.

The program printed in the following pages has never been equaled at one of our meetings and is a true "Wisconsin" program. You will note that September fifth and sixth are clinical days with the first meeting of the House of Delegates the evening of the sixth. The program proper begins the morning of the seventh. All scientific meetings will be held in the Auditorium.

Every member of the State Society should feel that it is his plain duty to attend this anniversary and Home-Coming. Make your plans now. The birthday party will not be complete without *you*. Come and bring a strong grasp in your right hand!

PRELIMINARY REPORT OF CHAIRMAN, COMMITTEE OF ARRANGEMENTS.

THE meeting this year should be a banner meeting and every effort has been made to care for the physical and mental welfare of the members and guests.

The meetings will be held in the Auditorium on the 5th Street side. Entrance is in the middle of the building on 5th Street. The Commercial Exhibits are numerous and will, we feel, be excellent. There will also be Scientific Exhibits. Dr. M. L. Henderson has had charge of this section. Enough said.

The Registration desk will be in the lobby of the entrance. Be sure to register and receive the button of identification.

In the July number of the JOURNAL is a page on which is given the clinics to be held at the hospitals on Monday and Tuesday and the hotels with rates for rooms. It is hoped that this last information may prove of service. The work was done by Dr. W. T. McNaughton, to whom thanks are extended.

On Wednesday night we have planned what we hope is a real innovation, a combination of entertainment and instruction. In the main meeting hall, at 8:00 P. M., there will be shown two films. One demonstrating some phases of embryology in plants and animals; the other showing various methods of obstetrical technique. These films, so we are told, are wonderful. There will be a speaker for each who will make running comments. Also, there will be shown a number of slides illustrating the history of obstetrics from ancient times. This should be fascinating.

On Thursday evening at 7:00 P. M., the "big show" will take place at the main dining hall of the Athletic Club. There will be eats, music, a

bit of medical history of Wisconsin illustrated, and some (but not too much) speaking. Tickets will be procurable at the Registration desk in the lobby of the 5th Street entrance to the Auditorium. Dr. C. M. Echols has promised a surprise.

Admission to the Wednesday evening program will be by lapel button. Members and guests may bring ladies to this as well as to the banquet on Thursday evening.

L. M. WARFIELD, *Chairman.*

OHIO'S MEDICAL PRACTICE LAWS HELD CONSTITUTIONAL BY SUPREME COURT; STATE MEDICAL BOARD VINDICATED AND CHIROPRACTIC INJUNCTION DISSOLVED.

The following is of such importance as to justify the entire editorial section of this number of the JOURNAL. It is taken from a publication of the Ohio Public Health Association.

IN an opinion rendered April 26, 1921, by the Supreme Court of Ohio, the Medical Practice Act of this state was again upheld and a stinging rebuke administered to those who seek to tear down the safeguards erected through such legislation as the Platt-Ellis law and Talley law which prescribe the qualifications for all who would treat the sick. The Court, in an able opinion written by His Honor, Justice Wanamaker, and concurred in by every member of that tribunal, recognizes public health as one of the most vital subjects of the police power of the state and in the conservation of public health upholds the right of the legislature to require all those who may desire to practice the art of healing, to furnish some substantial evidence, by public examination or otherwise, of qualifications to practice such art, as a whole or in any of its branches.

The statutory qualifications defined by Section 1270, General Code, as preliminary to taking an examination of persons desiring to secure a license to practice the art of healing in Ohio are held to be reasonable and valid statutory provisions, and are declared to be in full force and effect in the limited practice act, until lowered by any rule or regulation of the Ohio State Medical Board, pursuant to the statute.

This was an action in injunction brought by D. A. Williams for himself and about 300 chiropractors in the state who had refused to qualify under the law as limited practitioners, and raised the question as to the constitutionality of the Medical Practice Act, also charging discrimination against them by the State Medical Board. The action was begun before Judge Powell of the Cuyahoga County Common Pleas Court, who granted the injunction prayed for by the practitioners. Appeal was taken to the Court of Appeals where the injunction was dissolved and the petition dismissed at the cost of the plaintiffs. The judgment of the Court of Appeals is affirmed by unanimous decision of the Supreme Court.

The opinion of the Court states that "unusual research and consideration to the question involved" have been given.

Here is what the Court says on the subject of public health:

"Public health is the very heart of public happiness. The constitutional guarantees of life, liberty, and the pursuit of happiness are of little avail, unless there be clearly implied therefrom the further guarantee of safeguarding the public health, in order that life, liberty and the pursuit of happiness shall be made practical and plenary.

"Of late years the doctrine of conservation has received a new impetus in our American system of government. Originally this doctrine was applied largely to mines, forests, water-power and our natural resources. Later it was extended to hogs, cattle, buffalo and wild animals generally, and strange to say, lastly it was applied to human beings. Sanely and sensibly, it was argued that life was worth while in the abstract. It must be made effective by the conservation of health to which that life is entitled.

"Man is still the greatest mystery to man. His mind and body is the greatest workshop of the world. The chemical and organized forces operating in life and in death, in every possible variety of action and reaction, make him the most interesting study of natural science.

"Over this wonderful laboratory, Doctor Nature presides. His remarkable management of the human organism, in preserving its orderly functions, is excelled in no other department of nature. If uninterfered with or unhandicapped by any artificial circumstances or agency, he has within his laboratory the necessary cure for the major parts of all the ills that human flesh is heir to.

"As the Great Physician, he has charge of this great laboratory, that furnishes not only the motor

power for all human activity but likewise the curative agents for the abnormal conditions that frequently arise from the abuses, excesses and exposures of human life.

"The most that any human physician can do by way of cure of human ailments, is to aid or facilitate Doctor Nature's general plan. Manifestly, in order to do this, there must be a thorough knowledge of Doctor Nature's plan and policies in the various departments of human life,—the alimentary, the circulatory, the respiratory, the nervous and all other departments that coordinate and cooperate in human life.

"In order to intelligently and effectively cooperate, the human physician must have equal knowledge with Doctor Nature, as to this human laboratory, its chemical and organic ailments, agents, and forces, else they will work at cross purposes with each other.

"This would seem too obvious to require further argument. In primitive life, every man was his own dentist, doctor, lawyer. Why? Because there were no specialists, and one man was about as smart as another. In the course of our civilization and education, we came to realize that in many departments of life, special knowledge and training were highly necessary, and that the time had gone when *any* person had the right to assume that he could skilfully exercise the healing art, advertise as such, and induce the public to believe he was so qualified, without the slightest evidence of such qualification.

"Accordingly, the states now nearly all of them, have adopted a wise and salutary policy, that before persons shall engage in certain occupations that require special expert knowledge, training and experience, and as to which the general public has little or no knowledge—they must qualify before some board especially fitted to test them through some preliminary and appropriate examination, to ascertain their personal fitness to practice such special business or profession, *in order to insure the public of their efficiency before securing the public's confidence and the public's cash.*

"It would seem obvious, that in the exercise of the art of healing of the human body, it would be of primary importance to thoroughly know and understand the human body, its anatomy, physiology, hygiene and chemistry, through acquaintance with the structure of all the different organs of the body in their normal state so as to be able to determine the nature and extent of their abnormality, which is always the basis of disease.

"It is surely only elementary to say that before one can treat a disease intelligently and efficiently, he must know much about the nature and extent of that disease, the organs and parts affected, and even the cause of that disease. All these things and many more enter into an intelligent, practical and effective treatment.

"Every business and science has a language all its own. One of the first terms confronting us in the art of healing, is the scientific term of pathology, which relates to the nature, cause, progress and symptoms of a disease. Surely no argument is needed to convince one that such knowedge is highly essential to the proper diagnosis, that is, the determination of the particular disease or ailment from which the patient is suffering. After determining such disease, then comes the application of the appropriate remedy."

"If there be that thorough, scientific and practical knowledge of pathology, and that skilled scientific knowledge of diagnosis, then the state may safely leave the choice of remedy or cure very largely to the judgment of the practitioner. At least, his expert knowledge, derived from experience and education, should best fit him to make that choice, and a wise application of the remedy.

"But obviously, as to these two major essentials of professional equipment,—the state should set its standards high, so as to abundantly protect the public from the mistakes of ignorance, however well intentioned, from charlatanism, from professional quackery, however garbed in alluring advertisements, and from all those who would prostitute their profession to a profiteering basis.

"Manifestly before this scientific knowledge of the human body can be properly acquired, there must be some preliminary educational qualifications of a general nature. * * *"

"It is absurd for anyone to say, that you can develop and train a mere hod-carrier, with comparatively no education to become a skilled physician or surgeon in the same time that you can a college man with the same natural endowments.

"The medical practice act of Ohio recognizes the necessity of these preliminary qualifications, and before entering upon the study of the art of healing, the General Assembly has wisely provided by Section 1270 of the Medical Practice Act, the following:

"'The following preliminary educational credentials shall be sufficient,—a diploma from a reputable college granting the degree of A.B., B.S., or equivalent degree; a diploma from a legally constituted normal school, high school, seminary, issued after four years of study; a teacher's permanent or life certificate; a student's certificate of examination for admission to the freshman class of a reputable literary or scientific college.'

"The State Medical Board has recognized and adopted in effect these reasonable requirements in general educational lines, before anyone may take the examination for the general practice of the art of healing.

"These are not made imperative but their equivalent must be possessed by the applicant. In addition thereto the applicant must also produce a certificate issued by the entrance examiners and a diploma of a legally chartered medical institute in the United States *in good standing,* as defined by the board at the time the diploma was issued, or a diploma or license approved by the board, which confer the full right to practice all branches of medicine or surgery in a foreign country."

"* * * Surely there is nothing arbitrary, discriminating, irrelevant or unreasonable as to these qualifications from the viewpoint of personal and professional fitness for efficient public service in the conservation of public health. Neither are there well-founded objections to be taken to any of the other sections of the act as a whole, so far at least as relevant to this case."

Counsel for the chiropractors cited a recent decision said to have been rendered in Tennessee in which the Court held that since chiropractic treatments were not shown to be injurious to anybody, "that they do not give medicine, operate or subject the body to injurious manipulations—the requirement that they study and be examined in subjects in no way pertaining to their occupation is an arbitrary and unreasonable attempt to restrict their liberties and the liberty of the people who wish to patronize them."

The Ohio Court does not agree with this decision and Justice Wanamaker says so very plainly. "We have not been furnished the Tennessee statute to ascertain whether it bears any analogy to the Ohio statute," says the opinion, "but even if it did," the Court continues, "the obvious fundamental fallacies appearing in the opinion, as quoted, clearly show unreasonableness of the judgment in the Tennessee case."

* * *

"As the body politic is sometimes found to be in possession of undesirables foreign to our government and our public welfare that requires immediate and drastic deportation to other shores, so the physical body is not infrequently found to be in possession of some foreign growth whose immediate removal is indispensable to the health and life of the patient. To say that such knowledge in no way pertains to the treatment of the chiropractor is sheerest nonsense, even to a layman.

"Hot and cold applications are ordinarily most efficacious for temporary relief and very seldom harmful, but that is scarce a reason why they should be resorted to in all cases to furnish relief, merely because they are generally harmless. The failure to give the natural and necessary relief called for by the condition of the patient in the shape of some positive or affirmative action by way of treatment may be as harmful as the giving of a treatment that is harmful *per se.* What the patient often needs immediately is helpful treatment and not merely harmless treatment.

"The logic of the opinion (Tennessee case) does not appeal to our judgment.

"The saner and more sensible doctrine to the contrary is laid down in a very elaborate and exhaustive opinion of the Supreme Court of Missouri, in State v. Smith, 33 L. R. A., N. S., 179." The opinion of Judge Ferris in the Missouri cases is quoted from in the Ohio opinion and is referred to as "full of relevant citations, throwing much light on the principles herein involved." In this case the Court characterized the claim of the chiropractors that they do not "treat disease," but "adjust the cause" as "merely juggling with words."

As to the contention that it is a violation of their constitutional liberty to restrict the right to pursue any lawful calling or to determine for the people how they shall be treated, the Missouri court cites the laws prohibiting the manufacture of liquor which are enacted under the police powers and says: "Our jails and penitentiary are filled with inmates who have been deprived of their liberty for the public good. The power of the state to deprive its citizens of their lives for the public good has never been questioned."

Quoting further from the opinion of Judge Ferris in the Missouri case, the Supreme Court says: "The legislature thought perhaps that this act was necessary to protect credulous sick people from injury at the hands of charlatans and quacks, with their specious promises of a sure cure without drugs; or it may have thought necessary to forbid harmless practices in order to insure protection against those that are dangerous and hurtful. *Sick people sometimes grow desperate in their search for a cure, or their judgment becomes weakened, so that they fall an easy prey to the ingenious and varied devices of the pretended healer. We know that some people are prone to give more weight to a skilfully worded advertisement than to the advice of a competent physician.*"

The Supreme Court upheld the findings of the Court of Appeals throughout in declaring there were no grounds for complaint against the State Medical Board by the chiropractors. The lower court found that the various chiropractic schools instead of being discriminated against by the Ohio Medical Board, had refused to permit the State Medical Board to examine their course of study "unless the board would put itself in an attitude of sympathy with the work of the chiropractic schools."

Commenting on this attitude on the part of the chiropractic schools, the Supreme Court says, in conclusion:

*"It is rather a novel claim to make, that before one can be fair and impartial as to the standing of a school or college, that he must first put himself in a mental attitude of sympathy with the school. Ordinarily, the Courts advise juries against all considerations of sympathy in the determination of a fair and impartial verdict. * * * If there be any need of a sympathetic attitude, it would seem that the schools should put themselves in an attitude of sympathy toward the Ohio statutes, rather than that the statutes and the administrative boards under them should be put in an attitude of sympathy toward the schools."*

PHYSIOLOGY OF BLOOD IN INFANCY AND CHILDHOOD.

In a discussion of some of the modern lines of investigation of blood, William Palmer Lucas, San Francisco (*Journal A. M. A.*, July 30, 1921) indicates the various lines along which these problems can be attacked, and points out some of the achievements which have resulted from these studies.

THE JOURNAL CLINIC

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ST. JOSEPH'S (MILWAUKEE) MEDICAL AND SURGICAL CLINIC.

CONTRIBUTED BY DRS. LOUIS F. JERMAIN AND CHESTER M. ECHOLS OF THE HOSPITAL STAFF.

PROLAPSUS UTERI, COMPLICATED BY DOUBLE PYOSALPINX.

PRESENTED BY CHESTER M. ECHOLS.

Gentlemen:

At our last clinic I showed you a case of total prolapsus uteri with no other complications than the usual concomitant cystocele and rectocele. The patient now before us likewise has a uterus hanging two inches out of the vulva, but with this striking difference: the pelvis is partly filled with an inflammatory mass which immobilizes the fundus so rigidly that no amount of traction on the cervix will budge it.

The salient points of the history are as follows:

Present age 42; menstruated at 12, married at 20, had eight children and one miscarriage; 5 children living and well; all deliveries normal; has never had any serious illness nor any surgical operation; has not been pregnant within the past 5 years; has done hard manual labor during whole married life. Has complained of "falling of the womb" for past 17 years, dating from birth of third child. For past 4 years cervix has protruded from vulva. Has tried pessaries unsuccessfully. Menstruates regularly; 26-day type, duration 4 to 5 days. Family history negligible. Walked into hospital.

Five weeks ago she had a severe attack of abdominal and pelvic pain, accompanied by fever and increased leucorrhoea. Has not been able to do full work since.

Examination—Large, robust, muscular woman of 42. Head, neck, and special sense organs neg. Heart and lungs normal. Abdomen prominent; small umbilical hernia; tender, non-fluctuating, rigid, irregular mass, not separable from corpus uteri,—fills pelvis and extends upward to within an inch of level of umbilicus. Cervix projects through vulva and has deep bi-lateral tear. Corpus uteri fixed.

Why do I say this pelvic mass is probably inflammatory? Why may it not be made up merely of multiple fibro-myomas? Because, even under complete anesthesia the mass is immovable. Uncomplicated fibroid tumors practically never become so firmly incarcerated in the pelvis as to be immobile under anesthesia. As circumstantial

evidence against fibroids, we may point out that not only has she no menorrhagia nor metrorrhagia, but that it is very uncommon for a middle aged woman who has borne eight children to have fibroids of any considerable size.

We now proceed to do a circular amputation of this enormously elongated and hypertrophied cervix, after first determining by means of a bent sound in the urethra that the bladder is in no danger of injury from the amputation. This done, we next restore the perineum by means of a radical perineorrhapy. Now, let us change our gloves and open the abdomen. You observe that this irregular mass, which more than fills the pelvis, is immobile and firmly adherent to the pelvic walls as well as to the sigmoid and to several loops of the ileum. Luckily I am able to find planes of cleavage which enable me to separate the whole mass and lift into plain view. You can now see that the bulk of this mass is composed of two enormous tubo-ovarian pus sacs attached to the sides of the enlarged uterus. The tubes, in places, are thicker than bananas. It is easy now to do a supravaginal hysterectomy and remove the mass in toto. Covering the stump and broad ligaments completes the operation. Having enucleated these pus sacs without any leakage, we might safely close this wound without drainage; but in deference to tradition, we place a small wick of rubber dam in the culdesac to be removed in 48 hours.

This case is rare in this respect; the patient is past forty, the mother of eight children, and had a third degree prolapsus uteri, yet she has developed these huge gonorrhoeal tubes. The coincidence is unusual, to say the least.

COMMENT.

Laboratory examination showed a pure culture of gonococcus in the pus sacs. Patient left hospital in good condition 17 days after operation.

CASE OF ACROMEGALY.

PRESENTED BY DR. LOUIS F. JERMAIN.

Gentlemen:

The patient I desire to present to you today is 38 years of age; married and has no children. Her parents are living and well and her brothers and sisters are all living, well and normal in size and stature.

At present she complains of headaches, failing vision and an overgrowth of face and extremities.

She had the usual children's diseases; menstruated at 12 and was regular until after her second operation at the age of 22. At about the age of 17 her menstrual periods became painful. At the age of 20 she was operated upon for appendicitis and her left ovary was removed. At 22 her other ovary was removed and menstruation ceased.

She was quite well until about six years ago when she began to complain of headaches and noticed that her hands and feet were gradually growing larger and that she was gaining steadily in weight.

Present Examination: Head large, particularly the frontal region. Pupils equal and active. No paralyses of extrinsic muscles. Frontal bones large and prominent. Zygomatic arch enlarged. Face broad and coarse in appearance. Nose large. Cheek bones prominent. Lower jaw enlarged and prominent. Marked increase in spacing of teeth, especially incisors. Teeth in poor condition. Tongue large and coated. Chest is well developed. Lungs and heart are normal. Pulse rate 74. Blood pressure 130 systolic; 80 diastolic. Spleen and liver not palpable. Abdomen negative. Reflexes normal. Hands and feet greatly enlarged. Former size of glove she wore was 5½, now she wears men's size 9. Former size of shoe 4½, now 9½.

X-ray radiograph of hands shows marked increase in size of bony structures. X-ray radiograph of head shows very large sella turcica with practical obliteration of both clinoid processes.

Ophthalmoscopic examination shows bitemperal hemianopsia with beginning optic atrophy in both eyes.

Two hundred grams of glucose gave very marked glucose reaction in the urine.

The patient before you presents a most typical example of acromegaly.

DISCUSSION.

Acromegaly is a dystrophy characterized by increase in size of the face and extremities and perverted function of the anterior lobe of the pituitary gland. It is a rare disease and rather more common in women than in men. Practically all cases show some changes in the pituitary gland, hyperplasia, adenoma, fibroma or sarcoma.

The symptoms are grouped into those due to pressure effects and those due to perversion of the secretion of the gland. The regional symptoms are headache, somnolence, bitemperal hemianopsia, optic atrophy, exophthalmus, deafness, irritability of temper, depression and progressive dementia. Symptoms due to perversion of function are heavy features and progressive over-growth of face, hands and feet, involving the soft as well as bony structures. The alveolar processes are widened and the teeth separated, kyphosis may develop, menstrual disturbances occur and there is usually high sugar tolerance.

An interesting question is: "What relation does the removal of the ovaries and the cessation of menstrual function at the age of 22 bear to the development of the hypophiseal enlargement and acromegaly in this case?"

EMPYEMA FOLLOWING PNEUMONIA IN INFANT OF FOUR MONTHS.

J. GURNEY TAYLOR, M. D.,

MILWAUKEE.

Realizing that pleurisy with effusion in infancy is not uncommon, especially when it is associated with pneumonia, still the diagnosis of unresolved pneumonia and effusion faces us frequently, and it is with this in mind that I am reporting the following case from my clinical service at The Milwaukee Infants Hospital:

G. F., born November 9, 1920. Admitted to Hospital with a provisional diagnosis of acute bronchitis and dyspepsia.

F. H., Mother has tuberculosis, now at Muirdale Hospital. Father has valvular heart disease. One brother living and healthy.

Previous History: Birth weight 9 lbs. 5 oz., breast fed for two months, then placed upon milk and water and cane sugar. At the time of admission complaint was frequent vomiting and constipation. There was also a history of indefinite eruption lasting two weeks, when one month old. The vomiting had been present for a week before admission.

Examination revealed a plump baby, pale, skin extremely dirty, with fair tissue turgor, seborrheic dermatitis of trunk and intertrigo of thighs. A large anterior fontenelle, level, no cranio-tabes, slight rachitic rosary. No thickening of joints. Tongue coated white, pharynx hyperaemic and rather constant coughing. The heart, liver and spleen were apparently negative. Tonsils were small, no adenapathy, but throughout entire chest were many moist rales. No prolongation of expiration or change in percussion note. The abdomen was soft and reflexes were all normal and active.

This bronchitis cleared up considerably within the next three weeks, but in the fourth week the infant developed a marked catarrhal involvement of pharynx and larynx with return of cough. Tonsils increased decidedly in size, post cervical glands became palpable, sharp rise in temperature to 102, and in 24 hours, very marked signs of consolidation of the lower left lobe were present with crepitant rales. No friction rub was detected. There followed a similar involvement of very small area of right apex anteriorly. In ten days temperature had returned to 99, but respiration remained elevated and there developed pain upon deep respiration. No friction at left base was detected, but posteriorly there was decided flatness upon percussion. Breath sounds were distant over this area, of about 1½ inches, high pitched, and marked bronchial respiration. Very few rales were detected except above effusion, where they were coarse, showing evident signs of resolution.

Durng the next week an irregular temperature developed, with marked cachexia and anorexia, but weight remained stationary. There was persistence and increased signs of effusion. Three weeks after the onset of the pneumonic process we determined to explore. There was no bulging of the interspaces, but marked increased resistance to the percussing finger was present. The leucocyte count gradually rose from 16,000 to 22,000, with high neutrophile count. Aspiration of considerable very thick yellow pus was obtained. No organisms were found in the direct smear, and the culture showed very scant growth of staphlococcus. No tubercle bacilli were found, but unfortunately the guinea pig test was not attempted, as ordered. From the time of removal of fluid the physical signs improved rapidly, appetite returned, and there was a gain in weight and general condition.

The analysis of urine showed albumin during the entire time that active symptoms were in evidence, but microscopic was negative. This condition also cleared up entirely before discharge.

The incidence of occurrence of pneumonia, J. P. Crozier Griffith in Diseases of Infants and Children states, "That a metapneumonic empyema in which the disease follows upon penumonia, that the temperature of the primary infection often falls to normal, remains so for several days, and then begins to rise again, exhibiting a regular course." This case is of the above type.

THE POST OPERATIVE CARE OF COMPLETE PERINEAL LACERATIONS.

BY H. W. SHUTTER, M. D.

MILWAUKEE.

The following cases illustrate very beautifully an important phase in the treatment of complete perineal lacerations, namely the post operative care:

CASE 1. Mrs. ———, primipara was seen early in May, 1921, in a Milwaukee hospital. Ten days before she received, during an operative delivery, a laceration extending through the sphincter ani muscle. The repair held for five days after which the patient complained of incontinence. On inquiry as to the post operative care the nurse volunteered the information that the "bowels had been excellent since the first day," meaning that the patient had had from one to three movements daily since delivery. Examination revealed a gaping vaginal orifice. On inserting a finger in the rectum no muscle tissue could be felt anteriorly. There

was no sphincter control. The post operative care in this case had been; 1st. The ordinary post partum light diet of the hospital. 2nd. Cathartic administration twenty-four hours after delivery. 3rd. Routine perineal irrigation every three hours. 4th. The patient was allowed out of bed on the seventh day.

Case 2. Mrs. H. K., primipara, age twenty-eight, was delivered March 26, 1921, at the Milwaukee Hospital of a living male child weighing eight and one-quarter pounds. The diagnosis was persistent occiput posterior. As the rotation was complete no effort was made to correct the position. With the membranes ruptured, forceps were applied after two hours in the second stage. Due to the large head, the increased diameters presenting in this position and the lack of moulding arising from marked ossification of the cranial bones, a laceration through the sphincter occurred. Repair was done at once. The patient was discharged fourteen days later with an excellent result.

The post operative care in this case was as follows:

1st. Morphine sulphate gr. 1/6 in the first twelve hours after delivery. This was followed by one or two dram doses of Tr. Opii Camph. every three or four hours for five days.

2nd. Liquid diet (excluding milk) for the first three days followed by a semi solid diet free from cellulose for three days more.

3rd. Cleansing of the perineum with cotton pledget saturated with weak bichloride of mercury. This was done every three hours.

4th. The patient was instructed to lie on the abdomen one hour in the morning and one hour in the afternoon after the first forty-eight hours. (This facilitates vaginal drainage.)

5th. A moderate dose of mineral oil was given twice daily after the night of the fifth day.

6th. On the night of the sixth day a small olive oil enema was given. (This is done preferably with a large soft rubber catheter.)

7th. The patient was given a saline cathartic (citrate of magnesia) on the morning of the seventh day.

8th. In order to insure the result the patient was kept in bed ten days.

The routine advocated above is gathered from the procedures employed in several clinics over the country. An effort to tie up the bowels for several days is almost universal. In the interest of the baby an objection is occasionally raised to the use of opium in these cases. I have never seen harm occur through opium given to the mother at this time. As the baby gets but little from the breast in the first few days, the amount of drug received is small if any. If the child becomes drowsy a bottle feeding may be employed. This is justified when one considers the future effect on lactation of a poor operative result.

It is exceptional to employ catharsis before the fifth to seventh day. The statement is occasionally made that if the bowels are tied up for a number of days, the first movement is bulky and may rupture the sphincter. The excellent results obtained from the above routine prove that the objection is unfounded clinically. Physiological rest for several days is necessary. If in the first few days the bowels are allowed to move, bad results are frequent. Little abrasions occur in the unhealed suture line. Infection is then admitted to the sphincter and perineal body. It is not uncommon to see incontinence or recto vaginal fistula follow the first movement.

Bulky distending enemas of soap suds, ox gall and the like, given to initiate the first movement are dangerous. Especially is this true when the tear extends up the rectal wall. The bowels should be opened from above, not below. I have seen, on the seventh day, a large enema of soap suds held in the rectum for thirty minutes, after which it was expelled through the vagina.

As regards local treatment of these cases, little is necessary. Avoid pouring solutions over the vulva in the first forty-eight hours after delivery. The vagina gapes and bacteria on the vulva may be washed inward. Perineal cleansing with cotton pledget saturated in weak bichloride of mercury solution is carried out every three hours. This promotes primary union in uninfected cases. If the superficial sutures are painful or are cutting they may be removed after the sixth or seventh day. Ordinarily they are left ten days. Experience has shown that it is unnecessary to remove all sutures in an infected case. Even if infection be present an effort should be made to save the sutures holding the sphincter. Small recto vaginal fistulae usually close themselves.

In cases where repair is unsuccessful the problem of care becomes a problem of sociology also. These poor women suffer almost intolerable agonies. The first question asked is "How soon can I be cured?" Failing in the primary repair, obstetricians are practically agreed that the best results are obtained after pelvic congestion has entirely disappeared. This requires five or six months and is supposed to correspond to the atrophy of the true corpus luteum. In the meantime the patient is instructed to choose a diet as light in fluids as is compatible with lactation. She should be given foods that will produce a bulk of solid faeces thus preventing frequent escape. Fruits, gas producing vegetables and unboiled milk must be avoided. Suitable dusting powders are prescribed.

It is frequently impossible in badly lacerated cases, to construct immediately after delivery an absolutely anatomical sphincter. It is difficult to isolate the ends of the torn muscle. A good result usually follows if the tissues at the sides of the anus are brought well foreward and firmly fastened. As a rule, with an assistant, good exposure and a conscientious effort to minimize sepsis, a good result may be expected. Meddlesome treatment by nurse or doctor may ruin the finest anatomical repair. A common sense routine will give results in a surprisingly large number of cases.

URETEROLITHOTOMY FOLLOWED BY A RARE POST-OPERATIVE COMPLICATION.

BY E. A. FLETCHER, M. D., AND W. M. KEARNS, M. D.,

MILWAUKEE.

This case is presented not because of anything very interesting in the diagnosis and treatment nor in the condition itself, but because of the rare post-operative complication.

CASE 3627. E. B.

Entrance Note. Patient walked into the hospital on Feb. 2, 1921, a well developed male student 24 years of age complaining of a laceration over left eye sustained in a basketball game and two sutures were applied. He returned on the following day complaining of bloody urine.

Family History. Father operated on for gall stones at 41 years and died at 52 with dropsy and pleurisy. Otherwise negative. No hereditary diseases.

Past History. Meningitis at 2 years followed by permanent total deafness left side and impaired right vision (20/200 at army examination). Mumps at 6 years. Tonsillectomy and adenoidectomy at 14 years following attacks of tonsillitis. Denies venereal infection.

Present Illness. Started Feb. 3 with hematuria, blood being well mixed with urine and constant. This was the sole symptom. No frequency, ardor, pain, gravel in urine or any other symptom. Patient gave no history of any definite injury to back or trunk but did state that during the past week was the first time he had participated in violent athletic work in 5 years.

Physical Examination. Well nourished, muscular young man. Skin over neck and dorsum reveals many scars of furunculosis. Left ear, total deafness. Right eye 20/200. No abdominal or kidney tenderness, no rigidity or any other findings. Blood pressure systolic 128, diastolic 90. Pulse, respiration and temperature normal.

Laboratory. Urine was heavily colored with blood and the albumin present was in corresponding amount, otherwise chemically and microscopically negative. Blood Wassermann—negative.

Simple Cystoscopy. No residual urine, bladder capacity over 200 c.c. Bladder wall—negative. Rt. ureteral orifice—negative, left ureteral orifice congested and puffed and the urine which jetted from this side was noticeably bloody.

Patient resisted further examination at the time, was kept under observation, advised to refrain from further participation in basketball and to be as restful as possible.

In the absence of high blood pressure and no history of hemophilic tendencies, the hematuria at the time was thought to be traumatic (i. e., produced by violent exercise after prolonged absence from games). In three weeks the hematuria had gradually disappeared and the urinary sediment showed only a few red blood cells.

On March 3, patient suffered a severe left renal colic lasting seven hours. Pain was entirely in left abdomen and radiated into left testicle. At this time there was no macroscopic hematuria or other urinary symptoms, except slight frequency. There was however rigidity and tenderness in left lumbar region. The urinary sediment showed a few red blood cells and was otherwise negative.

On March 4, a complete X-ray examination of the urinary tract showed nothing in the right kidney, ureter or bladder regions but a very definite, circular shadow about 1 cm. in diameter in the line of the left ureter at the level of the junction of the 3rd and 4th lumbar vertebrae. On the following day another examination of the left side revealed the same shadow. A No. 6 bismuth catheter passed into left ureter met an obstruction 20 cm. up. X-ray showed the catheter tip at the shadow which had remained in same place. This made the diagnosis of ureteral calculus conclusive.

On March 9, the urinary output was 46 oz. and on March 10, a catheter was placed in left ureter up to calculus and the calculus removed by the dorsal lumbar route.

The fistulous wound closed a little late, in 16 days, and on March 31, the urine was clear and negative to all tests.

The recovery was uneventful except that on March 14, the fourth day after operation, patient woke up at night and noticed anesthesia of both hands below wrists, both feet below ankles and of the face, nose, mouth, and tongue,—he was unable to feel his teeth or food but could taste. Sense of smell was intact. Loss of hearing occurred in right ear, patient hearing only loudest talk. There was no dream recalled, no emotional state, only the normal anxiety one would expect. The condition in the hands and feet gradually disappeared in two days and that in the face, nose, mouth and tongue cleared up in four days and at the same time the hearing improved. In one week it was about 60% of the normal. There was no herpes associated with the condition.

On April 1st the patient visited the aurist at the Marquette dispensary and had wax removed from the ear with marked improvement and in 24 hours the hearing was normal.

The Neurologist attributed the sensory disturbance to shock.

DISCUSSION.

The available literature on post-operative complications has little to offer in the way of explanation. The possible causes may be included in the following: Toxemia, shock, meningitis, straps or faulty position at operation and hysteria.

Toxemia has been suggested but there were no other signs of it, the pulse, temperature and wound were normal. Shock is a possibility, but it appeared rather too late. Might it have been an

aftermath of the meningitis at 2 years, precipitated by the ether is another question. The idea of straps or faulty position must be considered, but the patient was in the lateral position and the upper arm entirely free.

The theory of hysteria although the sex, personal history, stable temperament and apparent calm during the attack are against it, seems most plausible. The glove and sock distribution in the extremities is typical but also suggests angioneurotic oedema. However, the only circulatory disturbance was a mild anemia of the effected parts. This distribution, not corresponding to any nerve trunks or segments, its prompt disappearance and coming with the sudden onset of wax deafness which probably produced on emotional state, speaks for hysteria.

LUNG ABSCESS FOLLOWING TONSILLECTOMY.

From Milwaukee County Hospital Medical Clinics.

BY F. D. MURPHY, M. D.,

The complication of lung abscess following tonsillectomy is not as uncommon as one would think; but on the contrary a review of the literature on the subject covering the last eight years shows that it is rather frequently the result of operation upon the nose and throat.

The following is a case which illustrates a lung, abscess following tonsillectomy:

A colored school boy, age 13, entered Milwaukee County Hospital, November 27th, 1920, to have his tonsils and adenoids removed. The history was negative; the physical examination revealed nothing of importance. He was operated on November 29th, 1920. Two days after the operation he became quite sick, began to cough a great deal, and a fever of 103 developed. A physical examination showed signs of pneumonic involvement in the left inter-scapular region. These signs became more marked within the next few days.

During the two weeks which followed, the fever had large variations, dropping to 100, then shooting up to 104. The pulse ranged around 130. The W. B. C., was 18,000, the urine was negative, the serum Wassermann was ‡‡‡‡.

On December 13, 1920, the patient coughed up a large quantity of very foul smelling sputum; the odor around the patient was so offensive, that he had to be put into a special room away from the other patients. This state of affairs continued until December 20th, when, because the boy had syphilis, 3 gm. of Neo. Salvarsan was injected intra-venously. The day following the injection, the fever dropped from 104 to 101; the second day after the injection, the fever went down to normal, and remained normal.

The sputum which had been very profuse since the 13th, rapidly abated, and the patient began to improve; and by December 25th he was well enough to sit up.

He gradually got better and in January he was completely well. He was sent to the County Dispensary for further anti-luetic treatment.

In reviewing the literature of lung abscess following tonsillectomy, we find that the first cases were reported in 1913, in the Thesis Paris, by Bassim[1], who reported 19 cases of lung complications following tonsillectomy; four of the 19 died.

Scudder[2] reports sixteen cases of lung abscess; several cases following tonsillectomy and one case following nasal operation.

In March, 1916, Manges[3] before New York Academy of Medicine, reported nine cases of lung abscess following tonsillectomy; one case died; one case was sick for two years and recovered after resection of one lobe of the lung. He enumerated several factors concerned in causation of abscess after tonsillectomy; his opinion was that aspirated particles tonsillar tissue or infected blood were the most important factors; although the cases were bronchoscoped and no particles found, he is of the opinion that the foreign particles were coughed out previous to bronchoscopy. Next in importance are put emboli which he maintains may enter the patient's veins at the site of the operation. He then mentions the cases which for some reason, either local or general are antecedent causes; such as cough and general debility. He at last urges that tonsillectomy not be looked upon as a minor operation.

Clayton[4] reported seven cases of abscess; four following tonsillectomy. There was no uniformity in duration of symptoms, some were cured in a few weeks and some dragged on for months.

In July, 1918, Lewis[5] of Chicago, reported seven cases of lung abscess following tonsillectomy. He advises local anesthesia in tonsillectomies.

Bevan[6] in 1919 reported one case following tonsillectomy and he described the two stage operation which is used in these cases.

W. D. Tewksbury[7-8] reported several cases of abscess of the lung following operations on nose and throat; he used Rib Resection as his treatment, but reported 30% mortality; he resorted to artificial pneumo-thorax in two cases, with good results. One year later, February, 1918, the same author reported ten cases of lung abscess following

operations on the nose and throat, which were cured, 20% improved and 20% died. Of the ten cured, 20% improved and 25% died. Of the ten cases, seven had abscesses in the right lung and three in the left. In four cases, in which the abscess was less than two weeks duration, a prompt cure was affected. Of the remaining six cases, in whom the abscess was of longer duration, two were cured, two improved and two died. The author believes that cases of abscess of two weeks or less standing are benefited very much, while those abscesses of long duration are not benefited by pneumothorax.

Wessler[9] of New York, reports one hundred consecutive cases of lung abscess, 21 followed tonsillectomy. The majority of cases following pneumonia were in the lower lobes in the proportion of two to one, while those following tonsillectomy were in the upper lobes, about two to one.

J. A. Vietor,[10] reports a collection of five hundred cases of tonsillectomy. The review covers cases from 1915 to 1919. In all these cases he reports one pneumonia and no abscess. He bases his reasons for success upon the following points:

1. The cases were carefully examined before operation and no cases were operated, if he was not absolutely free from cough, cold in the head, fever, etc.

2. The next point was that the Rose position was used and also Poole aspirator.

3. The fingers were used as little as possible, instruments entirely.

4. They used no irrigation nor gargles at all.

Dr. Whittenmore[11] of Boston, records his results with a series of twenty-one cases of abscess of the lung. His conclusions are that the lobar pneumonia is not the most common etiological factor of lung abscess, but that aspiration of blood or of infected material following operation on the nose and throat is the most common cause. He held that a definite diagnosis must be made before operation, and this is to be accomplished by four examinations, namely:

(1) History,

(2) Sputum Examination,

(3) X-Ray Examination, and lastly

(4) Physical examination.

He says that operation is the only procedure to use, and he recommends the two stage operation referred to above. In this series, seventeen were operated upon; one case then died of pneumonia; one case refused operation and died of abscess of the brain.

Hedbloom[12-13] of Mayo Clinic, reports fifty-six cases of lung abscess; five following tonsillectomies done elsewhere. He says that from 1910 to 1919, 16,000 tonsillectomies were performed at Mayo Clinic with no abscess following. Later Hedbloom reported forty-five cases of lung abscess; seven following dental operations or trauma.

Because of the fact that our case of abscess recovered upon one injection of Neo-Salvarsan, the literature was reviewed to find out if any abscess of the lung were ever treated in that manner.

We found that in Germany, Becker[14] reported a case of spontaneous recovery after injection of Neo-Salvarsan. The history of symptoms was almost exactly like our case.

Alsberg[15] of Germany, reported four cases of gangrene of lung treated by Neo-Salvarsan. One case healed spontaneously; one case healed in three weeks; one case healed in two months and one case was operated on.

Reichman[16] also of Germany reported one case of gangrene recovering spontaneously following 1 injection of Neo-Salvarsan.

In many of the cases cited by the German writers there was no mention made of the Wassermann reaction, while a few were reported negative however, none were reported positive.

Thus it seems rather curious that Neo-Salvarsan should have a beneficial effect on these cases of abscess who are free from syphilis, as we know of no favorable action of Neo-Salvarsan, except that it is spirochetocidal.

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A CASE OF PERITONEAL TUBERCULOSIS TREATED WITH RADIUM.

BY DR. ROBERT E. FRICKE, M. D.

THE HOWARD A. KELLY HOSPITAL,

BALTIMORE, MD.

Through courtesy of Dr. William Neill, Jr., I am reporting a case recently under his care at the Howard A. Kelly Hospital. This case presents unique aspects, and is worth reporting, as it portrays the successful application of radium in a hitherto practically unexplored field.

September 27th, 1920, Dr. G. M. Pierce of McKeesport, Pa., referred to Dr. Neill a young lady with active pelvic and peritoneal tuberculosis. Her complaint on admission was pain in the left side of the abdomen and weakness. The family history was essentially negative, and the personal history was unimportant. Her general health had always been excellent. Present illness began five years ago with an attack of grippe. Since then she has had neuritis, mainly in the limbs, which persists; and appendicitis, for which an appendectomy had been performed in April, 1918. No pathological report relative to tuberculosis was mentioned at this time. In May, 1919, she received radium treatment at Battle Creek Sanitarium for menorrhagia and dysmenorrhoea, which checked the periods for four months. In January, 1920, she began having a persistant afternoon rise of temperature, from 99 to 100 degrees, but no cough, haemoptysis, or noctidrosis, and no physical signs of pulmonary tuberculosis could be demonstrated. Appetite and digestion gradually declined and she suffered with vague abdominal pains, becoming more severe in March, 1920, for which an exploratory abdominal operation was performed. The pelvic structures were found studded with small tubercles and the right tube and ovary were the site of a definite tubo-ovarian mass definitely the primary origin of the infection. The left ovary was in a cystic condition. The omentum and intestines were free from disease, the condition being limited to the pelvis; and there was only a small amount of clear peritoneal fluid. The right tube and ovary and part of the left ovary were removed. Microscopical examination of specimens revealed active tuberculous salpingitis. Menstruation ceased after this operation, and has not returned. Convalescence was uneventful, but the pyrexia continued. Three months before admission she developed sharp non-radiating pains in the left lower abdomen, which increased in severity. For the past two weeks she was forced to remain in bed. She has lost fifteen pounds in weight.

Examination on admission shows a poorly nourished, anaemic woman thirty years of age, apparently very ill. She appears listless, asthenic, presenting evidence of marked recent loss of weight. No other positive findings are listed until the abdomen is reached—here definite tenderness is elicited on palpation over the left lower quadrant between the umbilicus and the anterior superior spine. No masses can be made out, and liver and spleen cannot be felt. The abdomen is tympanitic on percussion, and there is no bulging of flanks or signs of fluid. On pelvic examination, no abnormality can be detected in that domain except the absence of the right tube and ovary. The blood Wassermann is negative, and the blood counts show 9,350 white blood cells, with a normal differential, and a haemoglobin of 80%. The urine was negative.

Radium treatment was then advised, and she received a total of 30 gram hours given over four abdominal areas throughout one week.

The patient was discharged October 4th in good condition, not having had any rise of temperature while in the hospital.

November 16th, Dr. Pierce writes that "On leaving Hospital she went to Atlantic City for three weeks, and general hygienic treatment was instituted. While there she developed a very marked jaundice and also a discharge from the umbilicus, which cleared up before her return home. On her return home she has lost perhaps 15 lbs. in weight, is very nervous, with loss of appetite, slight jaundice, and the abdominal pain which she had when admitted to hospital has returned, becoming severe at times..... At various times she has had to have small doses of morphia and sometimes I feel the pain may be more imaginary than real."

December 13th, Dr. Pierce again writes that Miss—— had been getting gradually weaker and in view of that fact on December 6th he performed an exploratory laparotomy and found a remarkable change had taken place since the previous operation. All macroscopic evidence of tuberculosis had disappeared. A small but rather tense adhesion between the scar of abdominal incision and the omentum was also freed, which perhaps may have accounted for a part of her abdominal pain. The pelvic peritoneum was free from any miliary tubercles.

Tuberculous peritonitis has always afforded a fascinating field for investigation, as a permanent cure for this condition has been very elusive to

date. Various methods have been adopted and enthusiastically advocated in their time, such as painting the abdominal wall with collodion, simple laparotomy, rest and fresh air, heliotherapy, and thalassotherapy, (E. Albert Weil, "La Radiotherapie des Peritonites Tuberculeuses," Paris Med. 1917, Vol. xxiv, p. 292). All of these have enjoyed a brief vogue, and because benefit from them has proven to be only transient, they have fallen into desuetude.

Ever since the X-ray has been employed therapeutically for deep-seated lesions, it has also been used for this disease, and a search of the literature will reveal many reports of absolute cures with this agent. There is an excellent report by Dr. Paul Eisen—"The Roentgen Ray Treatment of Tuberculous Peritonitis," (Am. J. Roentgenology, iv, 1917, p. 602), in which he describes X-ray treatment of eleven cases of tuberculous peritonitis at the North Chicago Hospital. "The patients not only became well in a relatively short time, but are well today, some after two and one and a half years' observation." In seven of his series the diagnosis was substantiated by laparotomies performed before initiating the treatment.

Among other writers reporting cures of tubercular peritonitis with the X-ray, besides Dr. Weil, are A. Morlet—"Radiotherapie," (Am. de med. phys., Anvers, 1914-19, Vol. xii, p. 250), and F. Kewitz—"Rontgendosierung und Rontgenfolge bei inneren Krankheiten," (Munchen med. Wochenschr., Vol. 67, Mar. 5, 1920, p. 285).

I have surveyed the literature for five years back without discovering any articles reporting the treatment of tuberculous peritonitis with radium. Dr. Curtis F. Burnam, in his many years of experience with radium since this form of treatment was initiated at the Howard A. Kelly Hospital, and with his extensive acquaintance with the literature, does not know of any case of tuberculous peritonitis in which radium has been extensively employed. Hence this may be a pioneer case; and the laparotomies performed before and after the treatment with microscopical examination of tissue on each occasion, seem to substantiate this case as a triumph for radium. Of course definite proof of absolute cure of this case by radiotherapy cannot be adduced; the removal of the probable primary focus of infection by Dr. Pierce in his first operation may have been the deciding factor. But the fact that the patient did not recover after this operation, but came to us a very ill person and kept declining in health until subjected to radiation, justifies us in believing radium to be the curative agent. At any rate this case indicates further investigation with radium in this field, with hopes of ultimately arriving at a truly effective form of therapy for tuberculous peritonitis.

PREVENTIVE MEDICINE

Edited by
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DEATHS FROM DIPHTHERIA.

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Since the development of the diphtheria antitoxin by von Behring, almost forty years ago, the death rate from diphtheria has been practically reduced by 50 to 60 per cent.

Notwithstanding this achievement, diphtheria still continues to be responsible for a large number of deaths each year. At present the mortality from diphtheria still averages from 8 to 14 per cent.

According to the latest figures available from the Bureau of the Census, those for 1919, diphtheria claimed 12,551 victims during that year. This is practically as many deaths from this cause alone as there were deaths from malaria, measles, scarlet fever and whooping cough combined, and almost twice the number of deaths from typhoid fever in 1919.

When it is considered that the microscopic diagnosis for diphtheria is comparatively simple and easily made, and that in diphtheria antitoxin we possess a safe and positive remedy, the number of deaths from diphtheria appear wholly out of proportion and unjustified.

The question naturally, therefore, arises: Why does diphtheria continue to claim so many victims if, as is claimed, the method of diagnosis and the remedy for the disease is so certain?

An analysis of diphtheria deaths occurring in

Milwaukee in 1920 undertaken by the Bureau of Epidemiology of the Milwaukee Health Department, is rather illuminating on the question and is, therefore, presented herewith.

Tabulating the deaths according to the chief apparant causes, the following classification appears:

Neglect of parents to call a physician in time	28
Insufficient dosage of antitoxin	26
Died without calling a physician	4
Initial dose too small	4
Change of physicians	3
Refused antitoxin	3
Complications	2
Not recognized by physicians	2
Christian Science	1

No discussion shall be attempted here of the cases in which the laity neglected to call a physician, or where antitoxin was refused, or where religious prejudices prevented the use of antitoxin.

These conditions obviously can only be cured by a continued policy of public education. Perhaps the increasing spread of diphtheria within the last years, which may yet assume epidemic proportions, may do as much as anything to arouse the laity out of its false sense of security, and result in giving the simple "sore Throat" that early and prompt attention which alone can insure against the unfortunate consequences of a neglected case of diphtheria.

The analysis, however, carries with it a rather serious indictment of the medical profession, and it is with regard to this side of the question that we wish to deal here.

"Not recognized by physician," "Insufficient dosage of antitoxin," "Initial dose too small," are all causes that are hardly excusable.

As already has been stated, the bacterial diagnosis of diphtheria is comparatively a simple matter. Where there is personal inability to make such an examination, then it is always a good rule to give antitoxin first and make the diagnosis afterwards, through the State Hygienic Laboratory or such other municipal laboratories as now the state affords in large number.

This leads up to the two remaining indictments which must be brought against the profession, viz.: "Too small initial dosage" and "the insufficient dosage of diphtheria antitoxin."

It might be argued that the matter of expense stands in the way of using adequate dosage of antitoxin. In view of the fact that the State Board of Health provides antitoxin free of charge for indigent cases through local druggists, this argument cannot be considered a valid excuse.

Judging from the experience which our investigation here in Milwaukee has brought to light, we are forced to the conclusion that it is not a matter of the cost of antitoxin, but a hesitancy on part of the physician to use antitoxin.

Apparently there still exists a quite widely spread misconception and fear as to the harmful, if not fatal, effect from so-called anaphylactic shock from the use of serum. It is on this point that the profession, at least a part of it needs reassurance.

Diphtheria antitoxin may be given without any fear of any serious or fatal anaphylactic action. In our Contagious Disease Hospital here in Milwaukee, where we have treated 1480 cases within the past six years, we have yet to find our first case in which any serious reaction followed the use of antitoxin; nor have any serious results been brought to our attention from the use of antitoxin in other institutions where children were repeatedly injected (prophylactic) with diphtheria antitoxin.

It might here be stated, parenthetically, that the use of the Schick test now can determine the use of prophylactic injections of antitoxin, and should be used wherever any large number of children in institutions has been exposed to diphtheria.

The average dose of antitoxin, as given in our Contagious Disease Hospital for the past four years has been approximately 30,000 units. 20,000 units are usually given as an initial injection, although in severe and neglected cases oftimes 30,000 or 40,000 units are given as an initial dose. A second injection, equal in dosage to the first, or even larger, may be necessary in case the local symptoms show no improvement within eighteen hours. While 10,000 units of antitoxin may be sufficient to overcome the disease in a certain number of mild cases when seen early, the safer plan, in order to insure more uniform success, is to give the initial dose of 20,000 units.

Notwithstanding the fact that we receive a large percentage of late and neglected cases, as well as a goodly number of laryngeal cases at our municipal contagious disease hospital, our mortality in

1919 has only been 9.24%, and last year the percentage was cut down to 8.21.

This is distinctly less than was the percentage of deaths at the hospital in former years when antitoxin was used in smaller dosage, and is also less than is the percentage of deaths for the general practitioner, viz.: 9.46% in Milwaukee, and 11.87 for the state at large. The last report of the Census Bureau available, that of 1919, gives 14.7 as the percentage of deaths in the registration area.

From our experience we, therefore, would urge, first, that diphtheria antitoxin be given in all cases where any suspicion of diphtheria exists, bacterial diagnosis to follow; and secondly, that diphtheria antitoxin be given in sufficiently large doses, not less than 20,000 units as a minimum initial dosage.

INDUSTRIAL HYGIENE AND HOME ENVIRONMENT: WITH SPECIAL REFERENCE TO THE INCIDENCE OF TUBERCULOSIS.

BY ROBERT OLESEN, M. D.,

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A branch of preventive medicine which involves the health and well-being of 40 millions of people in the United States may rightly be regarded as deserving considerable attention from public health workers. Industrial hygiene and sanitation, dealing as they do with the medical, sociologic and economic aspects of gainful occupations, have achieved this distinction. Lest there be any misconception as to the scope of these subjects it should be recalled that industrial hygiene has to do with the individual while industrial sanitation deals with the working environment.

Industrial hygiene and sanitation are comparatively new objects of attention in this country and there is a tendency in some quarters, in the enthusiasm of tilling an extensive and fertile new field, to regard the industrial environment as solely responsible for such ill-health as occurs among the workers. There is no desire to discount the mental and bodily harm incident to work carried on under obviously or insidiously dangerous conditions. At the same time it should be remembered that the time spent by employees in their places of business ordinarily ranges between 25 and 50 per cent of the entire time at their disposal, the remainder of the time being spent in transit to and from the places of employment, on the streets, in public places, in their own and others homes. Therefore, the conditions under which an industrial employee lives away from the work place are entitled to a reasonable share of attention when considering tuberculosis, the most important single problem connected with industrial hygiene and sanitation.

Whether tuberculosis is commonly contracted as a result of occupation is a mooted question concerning which it is exceedingly difficult to submit conclusive evidence. According to the present-day conception of the matter the disease is frequently contracted in infancy or during early childhood but does not ordinarily manifest itself with sufficient intensity to attract attention. Under the stimulus of certain exciting causes, such for instance, as exposure to irritant dusts, labor in crowded, poorly ventilated or otherwise insanitary work places, the latent disease processes may be aroused to activity.

Therefore, the prevention of tuberculosis among industrial employees resolves itself into a general health problem rather than a narrow consideration of damage inflicted through the nature of the employment or character of the work place. It is the purpose of the present paper to direct the attention to the necessity for attacking the problem as a general rather than a special one. The majority of the methods to be used and the manner of their application are too well known and understood to require repetition. There are, however, certain phases of the matter which may well receive further consideration.

At the present time there is a notable lack of understanding of the need for unifying the efforts directed towards the lessening of the ravages of tuberculosis as it is usually encountered among industrial employees. An unduly large proportion of the present-day effort appears to be concentrated upon improvement of the working conditions while the workers themselves are not consistently encouraged or required to contribute to their own protection by improving their personal hygiene and home sanitation. In many instances, too, the community in which the worker resides is not fully alive to its responsibilities. The state, meaning the official governmental agencies, should aid in lessening industrial tuberculosis by enacting sani-

tary building codes, by making regular and intelligent inspections of housing conditions and enforcing reasonable requirements. Furthermore, hours of labor should be reasonably regulated, minimum wage scales prescribed and adequate medical inspection service insured. It is encumbent upon communities to provide pure food and safe water supplies and especially to shield its people against disease invasion by putting into effect such special anticipatory measures as will insure the fullest health protection. These matters are not mentioned because they are innovations but rather to emphasize the need for correlating various agencies which frequently are unaware of the ultimate influence of their efforts upon the general well-being.

As the science of preventive medicine is unfolded it is coming to be recognized more and more that its ramifications are far-reaching. Furthermore, influences which at first sight appear insignificant often prove to be of definite import in preventing unnecessary suffering and death. In this connection reference may be made to several factors which at the present time have not been developed to the extent their apparent prominence warrants.

Adaptation of workers to occupations for which they are best fitted mentally and physically is one of the crying needs of modern industry. At the same time those persons who are found to have defects which disqualify them for specific occupations should be cared for, preferably by and at the the expense of the state.

Definite though elastic medical and nursing service which extends beyond the factory and office walls is another urgent need in the prevention of industrial tuberculosis as well as other occupational diseases. The barrier which has been erected between the work place and the home must be removed before health hazards can be eliminated in their entirety.

While morbidity statistics are available in industry for the mere gathering, it is well known that the uses to which these valuable data have been put are comparatively limited. Nevertheless, a definite system, simple in scope at first, whereby industrial and home illnesses may be recorded and studied, would mark the beginning of definite prophylactic measures. Analysis of information gathered in this way would indicate with considerable accuracy the conditions requiring correction or modification.

Studies of other statistical evidence as obtained from death records should not be neglected. Unfortunately these data will be only too available despite the concentrated efforts put forth to reduce tuberculosis and other occupational affections. The fact that age and occupation have a definite bearing upon mortality due to occupation must be clearly recognized. This line of study is important because it indicates clearly the occupations in which certain diseases cause abnormally high death rates. Evidence of this character enables concentration of effort where it is most needed. By way of illustrating the value of this method it may be stated that in New York City, for instance, a study of the mortality statistics indicates the highest mortality from respiratory diseases in those occupations which are carried on in crowded or poorly ventilated offices and shops, being particularly prevalent among clerks, bookkeepers, office assistants, compositors and printers. While the findings obtained in this manner may vary according to the locality and the industries included, nevertheless, the need for concentrating medical, social, economic and public health pressure upon the point most sorely in need of such assistance is most definitely and clearly indicated.

Fully as essential as any of the measures already advocated for controlling preventable diseases in industry is the necessity for prompt notification to the local and state authorities of all cases of these affections. The responsibility rests not only with attending physicians but also with responsible heads of families or any other persons having knowledge of the existence of these maladies. The number of reported deaths from tuberculosis far exceeds the number of reported cases from the same disease, whereas the opposite condition should maintain. This statement is applicable to practically the entire country, certainly to the State of Wisconsin, which may be considered no better or worse than its neighbors. There can be but one conclusion drawn from the disproportion of reported cases and deaths from tuberculosis, namely, that an unknown number of persons suffering from the disease in a communicable form are not under supervision and treatment. Furthermore, these uncontrolled cases constitute the foci which contribute so largely to the continued dissemination of the disease.

In the State of Wisconsin the experience with regard to this phase of public health administration is interesting and probably typical.

TABLE 1.

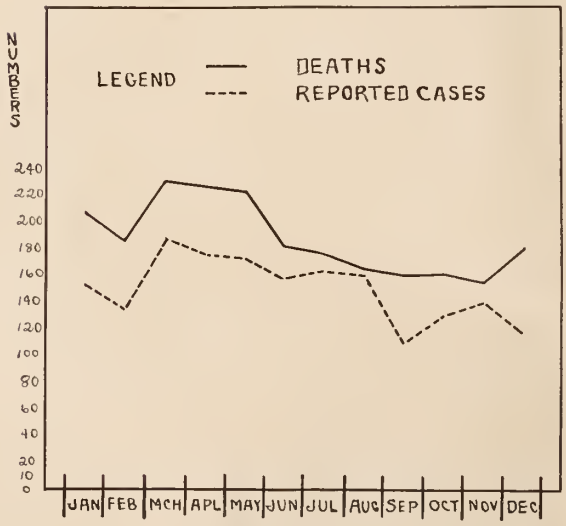
Average monthly numbers of deaths and reported cases of tuberculosis in Wisconsin based upon the 7-year period, 1914-1920.

Months	Deaths	Reported Cases
Jan.	207	151
Feb.	183	132
Mar.	229	187
Apr.	224	174
May	221	171
June	181	156
July	176	161
Aug.	163	159
Sept.	159	109
Oct.	160	129
Nov.	153	139
Dec.	179	117

FIGURE 1.

Average Monthly Numbers of Deaths and Cases from Tuberculosis in Wisconsin

Based Upon 5-Year Period, 1914-1920.



In table 1 are shown the average monthly numbers of deaths and reported cases of tuberculosis in Wisconsin, the figures being based on the 7-year period from 1914-1920. These facts are represented graphically in figure 1. It will be noted that there is considerable variation in the monthly mortality and morbidity averages. With the exception of December, however, there is marked similarity in the general trend of the two curves. In December, the mortality increases while the morbidity registration decreases. According to the records the mortality from tuberculosis in Wisconsin is greatest during March and least in November. Morbidity registration throughout the year is notably less than the mortality, creating an irregular gap which reflects the failure to recognize and report unnecessarily large numbers of cases of tuberculosis.

Until the gap between the death and case curve is closed and gradually widens in the opposite direction not even an approximate measure of success in combatting tuberculosis will be achieved. In addition to placing patients under intelligent supervision the chief value of prompt notification is the clue given concerning industrial and home health hazards. While it is true that the practicing physicians do not see all of the cases of tuberculosis they do see a far greater number than they report. Therefore, physicians can well be included in educational measures looking to improved morbidity registration. Prejudice against notification must be broken down, not only on the part of the physician but also among the people generally and the patients themselves.

Communicable diseases other than tuberculosis are poorly reported in Wisconsin but far better than active cases of tuberculosis. It has been possible to establish case-fatality ratios for several of the communicable diseases in Wisconsin, namely, scarlet fever, typhoid fever, measles and diphtheria. Using the average tuberculosis mortality as a base and the case-fatality ratios of the previously mentioned diseases as indicators it is possible to demonstrate the relative superiority in reporting these various affections. It is evident that tuberculosis reporting suffers severely by comparison. However, until notification becomes generally recognized as an invaluable adjunct in the control of all communicable diseases and particularly tuberculosis, genuine progress will not be apparent.

In conclusion it may be said that the problem of controlling what may be termed occupational tuberculosis is a general and widespread one, involving both the work place and the home, in addition to utilizing every conceivable agency which devotes itself in the least degree to the elimination of the conditions which produce the victims of tuberculosis. It is entirely possible that many of our present activities are misdirected. However, until our knowledge concerning the means of

transmission of tuberculosis is perceptibly enhanced it will be necessary to follow all promising clues, including those whose value appears dubious.

No. 186, S.) (Published April 25, 1921.

CHAPTER 152, LAWS OF 1921.

AN ACT to amend subsection 13 of section 1417m of the statutes, relating to venereal diseases.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. Subsection 13 of section 1417m of the statutes is amended to read: (Section 1417m) 13. It shall be unlawful for any person having the supervision or control of any public place to display or permit to be displayed any sign, poster, advertisement or prescription to be used in connection with the prevention or treatment of any venereal disease. THIS ACTION SHALL NOT APPLY TO PUBLICATIONS, ADVERTISEMENTS, OR NOTICES OF THE UNITED STATES GOVERNMENT, STATE OF WISCONSIN OR OF ANY CITY, INCORPORATED VILLAGE OR TOWN.

Section 2. This act shall take effect upon passage and publication.

Approved April 22, 1921.

COPY LAW.

No. 483, S.] [Published July 9, 1921.

CHAPTER 471, LAWS OF 1921.

AN ACT to amend sections 1417a—4, 1417a—6, and 1417a—7 of the statutes, relating to the treatment of county and state patients in the State of Wisconsin General Hospital.

The people of the state of Wisconsin represented in and assembly, do enact as follows:

Section 1. Sections 1417a—4, 1417a—6, and 1417a—7 of the statutes are amended to read: Section 1417a—4. If, upon the filing of said report, the court shall be satisfied that the case is one which should be treated at the State of Wisconsin general hospital, and that the person to be treated, or his parent, guardian, trustee or other person having legal custody of this person in case of a minor, is not financially able to * * * PAY THE FULL COST OF proper treatment; he shall enter an order finding such facts. In case the court is not so satisfied, he may take additional testimony, or make such further investigation as to him shall seem proper. The court may reject any application not found meritorious. Upon the entry of the order of the court approving said application, he shall communicate with the superintendent of the State of Wisconsin General Hospital and ascertain whether or not the applicant can be received as a patient. If the State of Wisconsin General Hospital can receive such applicant, the court shall thereupon certify his approval of such application to said hospital, and to the chairman of the county board.

Section 1417a—6. The State of Wisconsin general hospital shall treat patients admitted on certificate of the county court of any court at rates based on actual cost as determined by the board of regents of the University. * * * PAYMENTS MADE BY SUCH PATIENTS SHALL BE CREDITED TO THEIR ACCOUNT. THE STATE SHALL REIMBURSE THE UNIVERSITY FOR THE BALANCE OF THE NET COST OF SUCH TREATMENT, AND ASSESS ONE HALF OF SUCH NET COST AGAINST THE COUNTY FROM WHICH THE PATIENT IS SENT, AS HEREINAFTER PROVIDED. PATIENTS MAY BE ADMITTED WITHOUT CERTIFICATE OF THE COUNTY BOARD, BUT THE COST OF THE CARE OF SUCH PATIENT SHALL NOT BE DEEMED A PROPER JOINT CHARGE AGAINST THE STATE AND COUNTY, JOINTLY EXCEPT IN CASE SUCH PATIENTS ARE ADMITTED IN AN EMERGENCY PENDING THE ACTION OF THE COUNTY COURT UPON THEIR CASE. IN CASE THE COUNTY COURT FINDS SUCH A CASE A WORTHY ONE, AS HEREINBEFORE PROVIDED, THE CHARGES AGAINST THE STATE AND COUNTY FOR HIS CARE SHALL DATE FROM THE DAY OF HIS ADMISSION TO SAID HOSPITAL, AND THE TERMS AND CONDITIONS OF PAYMENT FOR THE CARE OF SUCH PATIENT IN CASE OF SUCH FINDING BY SAID COUNTY COURT SHALL BE THE SAME IN ALL RESPECTS AS IF HE HAD BEEN ADMITTED UPON THE ORIGINAL CERTIFICATE OF SUCH COUNTY COURT.

Section 1417a—7. No compensation shall be charged AGAINST or received FROM ANY SUCH PATIENT by any officer of the State of Wisconsin general hospital, or by any physician or surgeon or nurse in its employment, who shall treat or care for any such patient, other than the compensation provided for them by the board of regents of the university.

Section 2. This act shall take effect upon passage and publication.

Approved July 5, 1921.

COPY LAW.

ACTION OF CASCARA SAGRADA.

Hugh McGuigan, Chicago (Journal A. M. A., Feb. 19, 1921), does not agree with the view usually set forth in textbooks that cascara sagrada is an ideal drug and fool proof. He would confine its use to those cases in which from 1 to 2 c.c. has a definite action. Larger doses would seem to do more harm than good. They may produce an inflammatory condition of the bowel, with pronounced nausea and griping. The nausea may be produced by the therapeutic doses recommended in some textbooks. It only rarely leads to vomiting. Cascara should be used only as a laxative, never as a cathartic. When more than 2 c.c. of the fluidextract is needed to produce a laxative effect, another drug should be added or substituted. Small doses several times a day seem to give better results than the sum of these doses given in a single dose.

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Sheboygan	R. M. Nichols, Sheboygan	G. J. Hildebrand, Sheboygan.
St. Croix	E. A. Wright, New Richmond	W. H. Banks, Hudson.
Trempealeau-Jackson-Buffalo	N. S. Simons, Whitehall	F. T. Weber, Arcadia.
Vernon	J. Christenson, Westby	F. E. Morley, Viroqua.
Walworth	J. M. Marsh, Elkhorn	J. H. Young, Elkhorn.
Washington	H. F. Weber, Newburg	A. H. Heidner, West Bend.
Waukesha	G. H. Perrin, Menomonee Falls	S. B. Ackley, Oconomowoc.
Waupaca	E. H. Jones, Weyauwega	F. E. Chandler, Waupaca.
Winnebago	F. G. Connell, Oshkosh	H. W. Morgenroth, Oshkosh.
Wood	D. Waters, Grand Rapids	F. X. Pomainville, Grand Rapids.

SOCIETY PROCEEDINGS

DULUTH-SUPERIOR ACADEMY OF MEDICINE.

The Duluth-Superior Academy of Medicine (which meets every other month alternately in Superior and Duluth) has amplified its mid-summer meeting so as to feature the clinics in the hospitals of the two cities. It is the aim of the committee on programs to make a special effort to make these meetings of added interest. The desirability of having a thing of this kind on the banks of cool Lake Superior in mid-summer needs no argument. While most of the clinics are given by local men, two or three men of note will be asked to have papers.

The last week's meeting was a great success. July 29, clinics were held at St. Mary's and St. Luke's Hospitals in Duluth. In the evening a dinner was served at the Duluth Boat Club, after which papers were read by Dr. K. W. Doege of Marshfield, Wis., on "Newer Investigations in the Anatomy of the Stomach," Dr. C. G. McMahon, Chisholm, Minn., on "Treatment of Burns," and Dr. J. J. Eklund, on "Hernia".

The next morning, July 30, clinics were given at St. Mary's Hospital, Superior, followed by a lunch at the hospital and a general frolic at the Country Club golf course and drives about parks and boating, swimming, etc., in the afternoon.

W. E. Ground, M. D.

FOND DU LAC COUNTY.

The annual "chicken fry" of the Fond du Lac County Medical Society was held at Green Lake, Wednesday, July 13, with the Dental Society as their guests. The chartered boat left Norton's landing at three o'clock for the opposite shore, where supper was served. The return trip was made by moonlight and singing and dancing were enjoyed on the boat. About sixty people were present, Ripon, Green Lake and Waupun also being represented.

NINTH COUNCILOR DISTRICT.

The midsummer meeting of the Ninth Councilor District Medical Society was held Thursday afternoon, July 28, at the Wisconsin Rapids pavilion, Nekoosa. The program was as follows: "A Civilian Officer's Impressions of Medical Military Service," by Dr. D. W. Gerrill; "Gallstones, " by Dr. O. N. Mortenson; "Appendicitis in Children," by Dr. J. B. Vedder, Marshfield; "A Memorial of Dr. Ridgman," by Dr. D. Waters. After dinner was served, a smoker was enjoyed.

ROCK COUNTY.

The Rock County Medical Society held a picnic at Yost's Park, Beloit, Wednesday afternoon, July 27. Baseball was enjoyed in the afternoon and a picnic supper in the evening. About fifty attended.

WALWORTH COUNTY.

A meeting of the Walworth County Medical Society was held at the Courthouse, Elkhorn, Friday, August 5, 1921. The meeting was held for the purpose of reorganizing the society, which has not held a meeting for more than a year. Eighteen out of twenty-five members in the county were present, and it was decided to continue the society work and to hold a picnic meeting at Williams Bay in September, inviting the members of the Kenosha and Racine County Medical Societies to attend. The meeting was addressed by Dr. G. Windesheim, Kenosha, Councilor of the district, and Dr. Rock Sleyster, Wauwatosa, Secretary of the State Medical Society.

ASSOCIATION NEWS

PRELIMINARY PROGRAM.

HOME-COMING MEETING, STATE MEDICAL SOCIETY OF WISCONSIN, MILWAUKEE, SEPTEMBER 5-9, 1921.

CLINICS.

Monday A. M., September 5.

**County Hospital*, Wauwatosa.
Medical Ward Clinic—9-11 A. M.

Milwaukee Hospital (22nd, Cedar and State Streets).
Surgical Operative Clinic—8 A. M. (Limited to ten.)

Mt. Sinai Hospital (12th and Cedar Streets).
Surgical Clinic—8-12 A. M.

Trinity Hospital (9th and Wells Ctreets).
Medical and Surgical Clinics—9 A. M.

**Muirdale Sanatorium*, Wauwatosa.
Tuberculosis Clinic—10-12 A. M.

Luncheon—1 P. M. (Limited to twenty.)

*Wells-Wauwatosa cars on Grand Avenue, going west, leave Grand Avenue and East Water Street on the hour and twenty and forty minutes past. Ride to end of line. For Muirdale, same car and ride. Bus for Muirdale meets car.

Monday P. M., September 5.

Children's Hospital (10th and Wells Streets).
Clinic—4 P. M.

Tuesday A. M., September 6.

County Hospital, Wauwatosa.
Surgical Clinic—8:30 A. M.

St. Joseph's Hospital (4th Street and Reservoir Ave.).
Medical and Surgical Clinics—9 A. M.

Milwaukee Hospital.

Surgical Operative Clinic—8 A. M. (Limited to 10.) Wisconsin.

Mt. Sinai Hospital.

Surgical Clinic—8-12 A. M.

Tuesday P. M., September 6.

Columbia Hospital (Hartford and Maryland Avenues).

3 P. M.

1. Demonstration of some of the newer laboratory diagnostic methods.

2. Clinic at curative workshop—demonstration of methods used in the reclamation of the maimed and crippled by means of occupation, massage and supervised exercises.

3. Occupational Therapy methods for hospital patients and exhibits of work.

8 P. M.

First meeting House of Delegates—Gold Room, Hotel Wisconsin.

GENERAL SESSIONS.

Juneau Hall—Auditorium.

Wednesday, September 7—9 A. M.

1. The Goitre Problem as it Concerns the General Practitioner—E. F. Bickel, Oshkosh.

2. The Treatment of Fractures of the Hip by the Whitman Abduction Method—J. W. Powers, Milwaukee.

3. Blood Transfusion (Illustrated)—Roger T. Cooksey, Madison.

4. The After-Care in Tonsillectomy—V. A. Chapman, Milwaukee.

5. Industrial, State and Group Medicine—Burt R. Shurley, Detroit, Michigan.

2 P. M.

6. Address of the President—M. A. McGarty, La Crosse.

7. Encephalitis Lethargica, Experimental and Cultural Study—Wm. Thalheimer, Milwaukee.

8. Etiology of Encephalitis Lethargica—E. C. Rosenow, Rochester, Minnesota.

9. The Compression of Lung in One-Sided Tuberculosis by Multiple Rib Excision—A. J. Ochsner, Chicago, Illinois.

10. Observations and Treatment of Unlocalized Intracranial Injury—Curtis A. Evans, Milwaukee.

11. Early Wisconsin Medical History—Hugh P. Greeley, Madison.

8 P. M.

OBSTETRICAL PROGRAM.

Under Auspices Extension Division, University of Wisconsin, C. Henry Davis, Milwaukee, and Charles R. Bardeen, Madison.

Part I—Motion Pictures (3 reels)—How Life Begins.

Part II—Factors which Influence the Development of the Human Embryo—C. R. Bardeen.

Part III—Child Birth—Primitive versus Modern. (Illustrated by lantern slides showing postures and customs of primitive peoples)—C. H. Davis.

Part IV—Motion Pictures (5 reels)—
Obstetrical Operations as performed by the late Professor Dr. Wertheim and his associates. Pictures taken in Vienna, Austria.

Contents.

1. Clinical examination for pregnancy.
2. Abnormalities of Skeleton.
3. Normal delivery.
4. Breech presentation.
5. Face presentation and delivery.
6. Resuscitation of a child.
7. Walcher Posture.
8. Eclampsia.
9. Breech presentation with extraction of the child.
10. Podalic version from head presentation and extraction of the fetus by the foot.
11. Extraction of the dead fetus by the foot with perforation of the aftercoming head.
12. Craniotomy (perforation of a skull of a dead fetus).
13. Forceps delivery.
14. Cesarian section.
15. Cesarian section with Hydramnios.
16. Examination of prolapse of uterus.
17. Removal of an ovarian cyst by laparotomy.

Thursday, September 8—9 A. M.

12. The Use of Antisera in Streptococcic Septicemia—Harold E. Marsh, Madison.

13. The Biology of the Leucocytes—C. H. Bunting, Madison.

14. Metabolism and Metabolic Diseases Caused by Tissue Extract—Fenton B. Turck, New York City.

15. The Surgery of Infantile Paralysis—F. J. Gaenslen, Milwaukee.

16. Some Aspects of the Local Anaesthesia Problem (Illustrated by Motion Pictures and Lantern Slides)—Robert E. Farr, Minneapolis, Minnesota.

17. The Doctor for the Age of Doubt—Neil Andrews, Oshkosh.

2 P. M.

18. The Practice of Medicine in Wisconsin—Past, Present and Future—W. H. Washburn, Milwaukee.

19. Gall Stones — Their Basal Etiology — Edwin Henes, Milwaukee.

20. The Pathology, Symptomatology and Diagnosis of Renal Tuberculosis (Illustrated by Lantern Slides)—J. C. Sargent, Milwaukee.

21. Ureteral Stricture an Important Factor in So-called Idiopathic or Essential Haematuria (Illustrated by Lantern Slides)—Guy L. Hunner, Baltimore, Maryland.

22. The Fate of the Bone Graft—A. F. Jonas, Omaha, Nebraska.

7 P. M.

Banquet—Milwaukee Athletic Club.

23. Newer Conceptions as to the Causes of Gastric Ulcer—Karl Doege, Marshfield.

24. Vincent's Angina—James M. Severson, Rockford, Illinois.

25. The Fight on Cancer—Wm. E. Ground, Superior.

26. Experimental Studies upon the Etiology of Cancer—John W. Nuzum, Chicago.

27. What Surgery has Accomplished in the Permanent Cure of Cancer (Lantern Slide Demonstration)—Joseph Bloodgood, Baltimore, Maryland.

28. The Management in a Dispensary of Cardiac Diseases in Childhood—A. B. Schwartz, Milwaukee.

MID-WESTERN ASSOCIATION OF ANESTHETISTS.

ORGANIZATION MEETING, KANSAS CITY, MO., OCTOBER 24-28, 1921.

The Anesthetists of the Middle West will hold an ORGANIZATION MEETING, KANSAS CITY, MO., OCTOBER 24-28, in conjunction with the meetings of the Medical Veterans of the World War, Missouri Valley Medical Association, Medical Society of the Southwest and the National Anesthesia Research Society.

A splendid scientific program of pertinent papers is in the making of this occasion and the Clinics to be held will offer every opportunity to see and demonstrate the latest methods of anesthesia.

Membership in the Mid-Western Association of Anesthetists is open to all licensed and qualified members of the medical and dental professions as well as to research workers holding doctorates of similar standing, who are interested in advancing the science and practice of anesthesia.

A Special Session will be devoted to Anesthesia for Oral Surgery and Dentistry.

Headquarters will be at the Hotel Muehlebach and the Scientific Sessions and Annual Dinner will also be held there. As a large attendance is expected at this Joint Meeting make your hotel reservations now.

If you wish to present a paper during the meeting kindly notify the Organization Secretary at once, giving the title and brief abstract of same.

Fill in the details of the Membership Application and return it with your check or money order for the anual dues ($5) so that your Charter Membership Card may be sent you. Also send in the names and addresses of as many prospects for membership as you may know of.

The Visiting Ladies will be delightfully entertained so let the Secretary know how many will be in your party.

The following are the officers for the Organization Meeting: President, R. M. Waters, M. D., Sioux City, Iowa; Vice-Presidents, David E. Hoag, M. D. Pueblo, Colo., and Nettie Klein, M. D., Texarcana, Texas; Secretary-Treasurer, Morris E. Clark, M. D., Kansas City, Mo.; and Members Executive Committee, B. H. Harms, D. D. S., Omaha, J. E. Craig, D. D. S., Kansas City, A. E. Guedel, M. D., Indianapolis, R. S. Adams, M. D., San Antonio, R. L. Charles, M. D., Denver, and E. M. Moorehouse, M. D., Yankton, S. D.

The Organization Officers and Executive Committee will do everything they can to make this meeting interesting, instructive and enjoyable and your cordial co-operation and support are solicited in launching the Mid-Western Association of Anesthetists on a successful career for the benefit of all concerned.

For further information, address

Yours fraternally and cordially,

F. H. McMECHAN, M. D.,
Organization Secretary.
Lake Shore Road, Avon Lake.

MORRIS H. CLARK, M. D., *Sec'y-Treas.*
Rialto Bldg., Kansas City, Mo.

August 6th, 1921.

Wisconsin State Medical Journal.

Dr. R. Sleyster, Editor.
Milwaukee, Wisc.

Dear Doctor Sleyster:

Will you please announce in the September issue Wisconsin State Medical Journal, that the Second Annual Reunion of 89th Division Medical Officers will be held in Kansas City, Mo., Oct. 28th, 1921.

Thanking you in advance for this favor I beg to remain,

Very truly yours,
CZAR C. JOHNSON.

TO THE MEDICAL PROFESSION OF WISCONSIN.

The American Hospital Association will meet this year at West Baden, Indiana, September 12th to 16th. This important meeting has not been so near Wisconsin for a number of years. All practitioners should be interested in this meeting. Every doctor has more or less use for the hospital. Of the 150,000 physicians in this country, 60,000 are attached to hospital staffs in some capacity.

The exhibit of hospital equipment and conveniences will be wonderful and alone will be worth the trip to the meeting. The program, as usual, will be well worth while.

The location of the convention at the West Baden Springs Hotel gives convention visitors an opportunity to combine with their visit, a very pleasant vacation. This hotel is the largest and finest of the group of hotels situated in the famous French Lick Valley. It is convenient to the famous mineral springs of the vicinity and to the scenic beauties of the southern Indiana hills. The roads through Indiana are good for motoring and cars may be kept at the hotel garage.

Any physician desiring additional information may communicate with Dr. C. W. Munger, Executive Secretary of the Wisconsin Hospital Association, Columbia Hospital, Milwaukee.

CORRESPONDENCE

Rock Sleyster, M. D.,
Editor, The Wisconsin Medical Journal,
Milwaukee, Wis.

Dear Doctor:

I am sending for the Journal, a communication of protest.

Whether we are in favor of or against the national and state prohibition laws is a matter for the conscience of each individual to decide for himself; however, in accordance with those laws, it is our duty, not our privilege, to prescribe alcohol, or its preparations, only when we deem it best for the health and life of our patients.

Why, in the performance of such highly essential duty, should we, as physicians, be required to pay a license fee of $10.00, or any fee as to that? Why should not as much, the shoemaker pay a license fee to put a sole onto our shoe, the grocer to sell us his ware, the minister in dispensing liquor for religious purposes?

My feelings, and sense of justice, rebel at such discrimination. We have had, already, one taste of it in the narcotic law. Shall we continue to submit without protest?

I would suggest, that, at the next session of our House of Delegates, a vigorous protest be made, to rectify this class legislation and unjust discrimination.

We are healers of the sick, not dealers in alcohol and morphine.

Very respectfully yours,
Alfred Belitz, M. D.

NEWS ITEMS AND PERSONALS.

Dr. Albert G. Jenner, Milwaukee, returned home August first from an eight-weeks' study of the modern improvements and advances in genito-urinary surgery in the principal special clinics of Toronto, Montreal, Quebec, Halifax, New York, Philadelphia and Washington.

Physicians at the Resthaven Hospital, Waukesha, charged in affidavits by patients with neglect of disabled men, were exonerated of the charges in a report made by Dr. Jos. A. Hall, inspector general of the U. S. Public Health Service, to the Surgeon General.

Dr. Edward Mielke, who has practiced in Chicago for the past two years, has located in Appleton.

Dr. J. A. Bach returned late in July from an ocean trip from Vancover, B. C., to Skagaway, Alaska, then journeying via the Alaskan railway up the great White Pass to White Horse. Dr. Bach states that he enjoyed the outing more than he ever enjoyed any other he has taken.

Dr. G. Warren Newell has converted his residence in Burlington into a hospital. The hospital will have accommodations for ten or twelve patients and only surgical and obstetrical cases will be cared for.

Dr. T. L. Harrington of the staff of the Wisconsin Anti-Tuberculosis Association recently made a trip to Billings, Montana, where he described Wisconsin's methods in public health work before the joint meeting of the Montana Tuberculosis Association and the Montana State Medical Society.

The new Methodist Hospital at Madison was dedicated August 19, Bishop Charles Bayard Mitchell of St. Paul officiating at the ceremony.

Dr. F. G. Anderson, who recently completed his internship at Michael Reese Hospital, Chicago, is now associated with Drs. C. Midelfart and J. Mathieson of Eau Claire. Dr. Anderson graduated from the Northwestern University Medical School in June, 1920.

Erection of the "medical center" building for Kenosha has been begun. The building will be given over to offices, laboratories, operating rooms, etc., and is the project of Drs. C. H. Gephart, J. F. Hastings and A. L. Mayfield.

The State Board of Health has announced the appointment of seven members of the committee on nursing education, as follows: Miss Shirley Titus, superintendent of nurses, Columbia Hospital, and Mrs. Adelaid Northam, superintendent of nurses, Milwaukee County Hospital, Wauwatosa, for the Wisconsin State League of Nursing Education; Miss Amalia Olson, Eau Claire, and Miss Agnes Reid, Madison, for the Wisconsin State Nurses' Association; Mr. H. K. Thurston, business manager, manager of the Madison General Hospital; Dr. Joseph Lettenberger, Milwaukee, for the Catholic Hospital Association, and Dr. Oscar Lotz, Milwaukee, for the State Medical Society.

Dr. H. L. Moffatt of Arpin has removed to California because of ill health.

Dr. Spencer D. Beebe of Sparta has been elected president of the State Board of Medical Examiners.

Dr. William. C. Felton of Calumet, Michigan, has located in Appleton. Dr. Felton has been physician for

the Mohawk-Wolverine Copper Company of Calumet for several years.

Drs. Ira R. Sisk, Albert M. Coughlin and Willard A. Chipman have become associated with the Jackson Clinic at Madison. Dr. Sisk has just returned from Rochester where he has been for two years on a urological surgical fellowship at the Mayo Clinic. Dr. Coughlin comes from St. Louis where he has recently completed the medical course at Washington University, and Dr. Chipman from Boston, being a recent graduate of the Harvard Medical School.

Dr. H. J. Stalker has proved conclusively that you can "teach an old dog new tricks" if the "old dog" happens to be a thoroughbred. He celebrated his eighty-third birthday today by "flivving" to work as usual. In the pioneer years when Dr. Stalker was a physician in Randolph, Wis., he rode the roads in an open steel-rimmed buggy behind a thoroughbred that averaged eight miles an hour. That was the speed-limit then, even for doctors. It continued to be "good time" until the Locomobile came and after it, the long line of gasoline cars from the first Marmon to the last twin six. Dr. Stalker refused to be distanced. It was unpleasant to eat the dust and inhale the fragrance of half-burned gasoline. Although several years past the proverbial three-score mark, when Dr. Osler suggested that men should be chloroformed, he bought him a car and learned to drive it. "I suppose he's the only octogenarian in Wisconsin who drives his own car," one of his friends said this morning, "and he's eighty-three today." In addition to driving a car Dr. Stalker still handles a profitable practice at his offices in the Grosvenor building. His half century's experience with "all sorts and conditions of men" in equally varied states of health and illness makes him very popular as a consulting physician. Old patients from Randolph frequently come to him yet for an old prescription or a new diagnosis. His eighty-third birthday was without incident save for the daily "flivver-trips" to and from the office.—*Kenosha Evening News*, Aug. 12, 1921.

Dr. Louis M. Warfield will move his office September first from the Majestic Building, Grand Ave., Milwaukee, to Suite 319, Colby-Abbot Building, corner of Mason and Milwaukee Streets, where he will continue the practice of General Diagnosis and Internal Medicine.

That Wisconsin communities are alive to the value of child health work is evidenced by the enthusiastic response to efforts of the Wisconsin Anti-Tuberculosis Association to obtain for the state the national child health demonstration for which a location is being sought. At least three Wisconsin cities, Kenosha, Madison and Eau Claire, have made applications to the National Child Welfare Council for the demonstration. Perhaps the most aggressive campaign is being made by Eau Claire, where 35 organizations have united in an effort to have their city chosen. A member of the National Child Health Council committee reported favorably on conditions there after a personal investigation. An appropriation of more than $200,000 has been made for the demonstration, which will extend over a period of five years.

Osteopaths are not physicians under the Severson prohibition enforcement law and cannot write liquor prescriptions, it has been held by the prohibition commissioner. No licenses will be issued to other than medical men by the department, it was stated.

A large increase in the population of county insane hospitals is noted by the report of the state board of control. During the past year there has been an increase of 173 patients in county institutions alone and an increase of seven in state hospitals for insane. At the present time there are 1,440 insane patients in state institutions and 6,953 in county institutions. There has also been an increase of feebleminded during the past year. The report just issued shows an increase of 54 and the present population of feebleminded in institutions is 1,164. The number of patients in county tuberculosis institutions has also increased. During the past year the population of patients in county institutions increased 116 while the population in state institutions also increased 2.

Tariff Bill H. R. 74456 which has been introduced into the House of Representatives at Washington has provisions which will inflict heavy expenses on every hospital. It provides that all goods imported into this country will be valued at the American manufacturer's wholesale price, and puts a duty of 35 per cent on this amount. Carefully figured out the equivalent of this bill so far as surgical and medical supplies are concerned is a tax of *one hundred to one hundred fifty* per cent instead of the *twenty* per cent which we are now paying. If it were possible for our institutions to obtain all necessary materials in this country we should not, perhaps, protest this bill, As we all know, there are many many instruments and drugs which must be used and which are not made in America at all or, if made, are of very inferior grade. It should, therefore, be our aim to place hospitals on the *free list*. The Association, therefore, suggests that you communicate with your congressman, at once, registering a protest against this bill in its present form.

The records of sickness and death kept by the Wisconsin state board of health clearly indicate that whooping cough ranks high as a child killer. During 1920, 281 lives in Wisconsin were sacrificed to this preventable affection. At the same time 6,290 cases were reported to the state health authorities, though this number represents but a fraction of the cases that actually occurred.

"I understand that I am placed upon my honor in examinations, in the preparation of written work, and in the use of books and apparatus. I understand that if I am found unworthy of the trust thus put in me I shall be dropped from the medical school." This is the pledge which has been adopted as a part of the first officially organized honor system in examinations to be installed at the University of Wisconsin. It ap-

plies only to the Medical school which is pioneering in the plan. Each student must sign the honor pledge when he enters the Medical school. The statement, as submitted by a special committee, cites the fact that a physician must be trustworthy in his profession, and that the same ideals should be held while studying at the university.

Doctors may find themselves subject to arrest and prosecution unless they take out state licenses, according to the dry officer. The federal government has issued 1,887 licenses to Wisconsin physicians to write liquor prescriptions. Only 505 physicians have taken out state licenses. All physicians writing prescriptions for liquor without a state license are subject to arrest and prosecution, regardless of the fact they possess federal permits, it was pointed out.

Converting the corner of a schoolroom into a dental office and bringing a dentist to the rural schools, was the unique method adopted in Lincoln County to improve dental conditions among country school children and to impress them with the importance of caring for their teeth. Lincoln county has the distinction of being the first county in the state, and probably in the country, to bring free dental service to children in remote rural districts. An appropriation for this work was made by the county board in January, but a dentist was not obtained until April, so the work was carried on only during the last two months of the school year. Dr. F. A. Traver, a former Milwaukee dentist, had charge of the rural traveling clinic. During the two months 41 schools were visited and 645 children were examined. The children ranged in age from 5 to 15 years and approximately 90 per cent of them were found to be in need of dental care. Work was done on 516 children as follows: Fillings inserted, 450; extractions, 269; sets cleaned, 133.

DEATHS.

Dr. H. C. Fickes, Owen, Wisconsin, died at a hospital in Chippewa Falls, July 7, having been in failing health for some time. Dr. Fickes was born in 1853 and graduated from the Jefferson College of Medicine, Pennsylvania, in 1886. He practiced at Glenwood City, Wisconsin, for some time, later removing to Owen where he lived until the time of his death.

MARRIAGES.

Dr. C. C. Gratiot, Shullsburg, to **Dr. Mary Peebles**, Shullsburg, July 26, 1921.

NECESSITY OF CLEAR THINKING IN MILK MODIFICATION.

Lewis Webb Hill, Boston (Journal A. M. A., March 5, 1921), emphasizes strongly the need for every general practitioner's having a good working knowledge of infant feeding, because a large proportion of the babies in this country are fed under the advice of general practitioners. On account of the numerous methods of milk modification recommended and the calculation involved, many men become discouraged with the subject, lose interest in it, and give it little attention. The baby as a consequence suffers. The practitioner must have clearly fixed in his mind the elementary nature of milk; he must not look on milk as milk, but he must look on it as being made up of fat, sugar, protein, salts and water. He must realize that disturbances of digestion arise from sugar or from protein or from improper combination of these elements, and that, therefore, he must take into account the amounts of these elements that he is feeding to any baby, and be able to vary each one of them at will in any mixture he offers. He must also have some numerical method of expressing these amounts. It is this necessity for clear thinking with regard to milk modification that Hill discusses particularly. There are several methods of milk modification in good use, and it is not of great importance which one is used, provided the physician gives enough food in total quantity and the proper combination of the individual food elements to suit the digestion of the baby he is dealing with, and that he knows approximately the amount of each food element in the mixture, in order that he may vary these quantities at will, that he may be able to proceed in a rational manner, and that he may be able to express clearly to others, in the exact language of figures, what he has done. The modification of milk is the mechanical part of infant feeding. It is not the calculation that is difficult—any inexperienced medical student can quickly learn milk modification and calculation: the part of infant feeding that is difficult, that requires judgment and experience, that often eludes many practitioners in spite of years of experience with many babies, is knowing when to feed what.

MENTAL DEFECTS IN SCHOOL CHILDREN.

"The prevention and correction of mental defectiveness, "says the U. S. Public Health Service," is one of the great public health problems of today. Its influence is continually cropping out. For instance, recent studies have shown that feeble mindedness is an important factor in prostitution, and that a marked proportion of juvenile delinquency is traceable to some degree of mental deficiency in the offender:

"A recent state-wide survey in Oregon shows that more than 75,000 men, women, and children out of a total population of 783,000 are dependents, delinquents, or feeble minded, and that more than 500 school children out of a total enrolled school population of 32,500 are more or less mentally deficient. The latter fact is significant when it is remembered that the condition of the children of today is the best possible index to the condition of the community of tomorrow.

"The Oregon figures are considerably lower than the average shown by the draft examination, indicating that they are certainly not higher than those that would be obtained in other States."

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

Squint—Its Causes, Pathology and Treatment. By Claud Worth, London. 5th edition. 242 pp. Philadelphia: P. Blakiston's Son & Co. 1921. Price, $3.50.

The Starvation (Allen) Treatment of Diabetes. By Hill and Eckman. 4th edition. Boston: W. M. Leonard & Co.

Physical Diagnosis. By W. D. Rose, M. D., Associate Professor of Medicine, Univ. of Ark. 2nd edition. 309 illustrations. St. Louis: C. V. Moshy Co. 1921.

General Pathology—An Introduction to the Study of Medicine. By Horst Oertel, M. D., Professor of Pathology, McGill Univ. 357 pages, illustrated. New York: Paul B. Hoeher. Price, $5.00.

Operative Surgery. By J. Shelton Horsley, M. D., Attending Surgeon, St. Elizabeth's Hospital, Richmond, Va. 613 ilustrations. St. Louis: C. V. Moshy Co. 1921.

The Practice of Medicine. By Hughes Dayton, M. D., New York. 4th edition, revised. 328 pp. Philadelphia & New York: Lea & Febiger. 1921. Price, $2.25.

The Manner of Man That Kills. By L. Vernon Briggs, M. D., Director of the Massachusetts Society for Mental Hygiene. Boston: Richard G. Badger. 1921.

Functional Diagnosis. By Max Kahn, M. D., in collaboration with Horris H. Kahn, M. D., Jacob Rosenbloom, M. D., and Wm. J. Gies, Ph. D. 400 pp. New York: W. F. Prior, Inc. 1920.

Roentgen Interpretation. By George W. Holmes, M. D., and Howard E. Ruggles, M. D. 2nd edition. 400 pp. 184 illustrations. New York. Lea & Fehiger. 1921. Price, $3.25.

Nutrition and Clinical Dietetics. By Herbert S. Carter, M. D., Paul E. Howe, Ph. D., and Howard H. Mason, M. D. 2nd edition. Philadelphia & New York: Lea & Fehiger. 1921. Price, $7.50.

Infections of the Hand. By Allen B. Kanavel, M. D. 4th Edition, thoroughly revised. Illustrated. Philadelphia & New York: Lea & Febiger. 1921. Price, $5.50.

Diseases of the Skin. By Oliver S. Ormsby, M. D., Professor of Skin and Venereal Diseases, Rush Medical College. 2nd edition, thoroughly revised. Illustrated. 1166 pp. Philadelphia & New York: Lea & Febiger. 1921. Price, $10.00.

Medical Electricity and Roentgen Rays with a Practical Chapter on Phototherapy. By Sinclair Tousey, M. D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. Third edition. Thoroughly Revised and Greatly Enlarged. Octavo of 1337 pages, 861 illustrations, 16 in colors. Philadelphia and London: W. B. Saunders Company, 1921. Cloth $10.00 net.

Massage and Therapeutic Exercise. By Mary McMillan, Chief Aide, Walter Reed Army Hospital, Washington, D. C., 1918; Supervisor of Aides in Physio-therapy, Medical Corps, U. S. A., Washington, D. C. 1919-1920. 12mo of 274 pages with 74 illustrations. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $2.25 net.

A Text Book of Pathology. By Alfred Stengel, M. D., Sc. D., Professor of Medicine, University of Pennsylvania, and Herbert Fox, M. D., Director of the Pepper Laboratory of Clinical Medicine, University of Pennsylvania. Seventh Edition, Reset. Octavo of 1111 pages, 509 illustrations, many in colors, 15 colored plates. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $8.50 net.

Radiant Energy and the Ophthalmic Lens. By Frederick Booth. Introduction by Whitefield Bowers. 226 pages, 230 illustrations. Philadelphia: P. Blakiston's Son & Co. Price, $2.25 net.

Disturbances of Instincts and Effects. (The Parapathic Diseases.) By Wilhelm Steckel, Wien. 482 pp. Berlin and Wien: Urban and Schwarzenburg. 1920.

Handbook of Clinical Hydro-, Balneo-, and Climato-Therapy. By Alois Strasser, Professor at Wien; Franz Kirsch, Dr. at Wien, and E. Sommer, Professor at Zürich. Part 2, pp. 209-911. 48 illustrations. Berlin and Wien: Urban and Schwarzenberg. 1920.

Tuberculosis and How to Combat It. A book for the Patient. By Francis M. Pottenger. 272 pp. St. Louis: C. V. Mosby Co. 1921. Price, $2.00.

Types of Mental Defectives. By Martin W. Barr, M. D., and E. F. Maloney, A. B. 30 plates containing 188 illustrations. 180 pp. Philadelphia: P. Blakiston's Son & Co. 1921. Price, $3.00.

The Principles of Immunology. By Howard T. Karsten, M. D., and Enrique E. Ecker, Ph. D. Illustrated. Philadelphia and London: J. B. Lippincott Co. 1921. 310 pp. Price, $5.00.

Gynecology. By Brook M. Anspach, M. D., Associate in Gynecology, University of Pa. 750 pp. 526 illustrations. Philadephia and London: J. B. Lippincott Co.

The Technique of Psycho-Analysis. By Smith Ely Jelliffe. 2nd Edition, revised and enlarged. Washington, D. C.: Nervous and Mental Disease Publishing Co. 170 pp. Paper. 1920.

Dermatology. By Walter James Highman, Chairman Section on Dermatology and Syphilology, A. M. A., Associate Professor of Dermatology, N. Y. Postgraduate Medical School and Hospital. First edition, 482 pp. 95 illustrations. New York: The MacMillan Co. 1921.

Surgery of the Upper Abdomen. By John B. Deaver, M. D., Sc. D., LL.D., Professor of Surgery, University of Pennsylvania, and Astley P. C. Ashhurst, A. B., M. D., Associate in Surgery in the University of Pennsylvania. 2nd edition. 9 colored plates and 198 other illustrations. Philadelphia: P. Blakiston's Son & Co. Price, $14.00 net.

Keen's Surgery. Vol. VIII. By Surgical Experts. Edited by W. W. Keen, M. D., LL. D., Hon. F. R. C. S., England and Edinburgh, Emeritus Prof. of the Principles of Surgery and Clinical Surgery, Jefferson Medical College, Philadelphia. Octavo of 960 pages, with 657 illustrations, 12 of them in colors. Philadelphia and London: W. B. Saunders Co. 1921. Price,

Vol. VII and VIII and Desk Index Volume, Cloth, $25.00.

Principles of Hygiene: A Practical Manual for Students, Physicians, and Health Officers. By D. H. Bergey, M. D., Dr. P. H., Assistant Professor of Hygiene and Bacteriology, University of Pennsylvania. Seventh Edition, thoroughly revised. Octavo of 556 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1921. Cloth, $5.50 net.

The Principles of Therapeutics. By Oliver T. Osborne, M. D., Professor of Therapeutics, Department of Medicine, Yale University. Octavo of 881 pages. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $7.00 net.

A Primer for Diabetic Patients. A Brief Outline of the Principles of Diabetic Treatment, Sample Menus, Recipes and Food Tables. By Russell M. Wilder, M. D., May A. Foley, and Daisy Ellithorpe, Dietetians, The Mayo Clinic. 12mo of 76 pages. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $1.50 net.

BOOK REVIEWS

The Practice of Medicine. By Hughes Dayton, M. D., New York. Fourth edition, revised. 328 pp. Lea & Febiger, Philadelphia and New York. 1921. Price, $2.25.

This is a small manual for students and practitioners, a handy reference in abbreviated form which gives the essentials found in any of the larger volumes on "practice". One must not infer, however, that any essentials are omitted for they are not.

The fourth edition has been thoroughly revised and many changes made, especially in the chapters on infectious diseases and functional affections of the heart. This little work as a ready reference meets every requirement.

The Manner of Man That Kills. By L. Vernon Briggs, M. D., Director of the Massachusetts Society for Mental Hygiene. Richard G. Badger: The Gorham Press, Boston. 1921.

In this work, Doctor Briggs presents the histories of Spencer, Czolgosz and Richeson, three men whose crimes have attracted nation-wide attention. The work is "different" and unusual in every respect and the author is to be congratulated on the presentation of a crime and character analysis which has been seldom, if ever, equaled.

He has presented these histories in an endeavor to awaken society to its duties toward similar individuals in the various American communities. He argues that society is willing enough to condemn and punish the defective or mentally sick man the moment a crime is committed but that it is still delinquent in the matter of prevention. He makes it a medical problem, which it truly is, for crime's relationship to disease is so apparent that one can but wonder at the stupidity which inflicts punishment rather than treatment and attempts to cure without research into the cause of the trouble. One wonders that in this century anything so illogical as prescribing a rigid treatment for an act, without consideration of the mental and physical condition of the man who commits it, can prevail.

The work is well worth while and should be widely read.

Functional Diagnosis. By Max Kahn, M. D., in collaboration with Morris H. Kahn, M. D., Jacob Rosenbloom, M. D., and Wm. J. Gies, Ph. D. W. F. Prior, Inc., New York. 1920. 400 pp.

Dr. Kahn's work covers gastro-intestinal function tests, pancreatic function tests, liver function tests, tests of the functional capacity of the circulation, function tests of endocrine glands, and kidney function tests. It is a thorough painstaking work of 400 pages, combining in one volume a most complete treatise on what has become a most important branch of diagnosis. It is a distinct advance in the literature on the subject and the author deserves every credit and the thanks of the profession.

This book is one which will be almost indispensable in the hands of the laboratory worker and the group of individual physicians who have equipment for following up what has become almost a necessity in general diagnosis. The work is well worth while.

Roentgen Interpretation. By George W. Holmes, M. D., and Howard E. Ruggles, M. D. 2nd edition. 400 pp. 184 illustrations. Lea & Febiger, New York. 1921. Price, $3.25.

The second edition of Dr. Holmes' work, which received an enthusiastic welcome a few years ago, has been carefully revised and enlarged. From the first, it has been one of the most valuable texts and references in Roentgen interpretation. It has presented the essentials in compact and comprehensive form with ready references to recent literature for the student who desires more detailed information on any particular subject.

The illustrations, which number 184, are mostly engravings taken from X-ray plates and are unusually clear and well adapted for teaching purposes. The work is again recommended.

Nutrition and Clinical Dietetics. By Herbert S. Carter, M. D., Paul E. Howe, Ph. D., and Howard H. Mason, M. D. 2nd edition. Lea & Febiger, Philadelphia & New York. 1921. Price, $7.50.

This work is divided into four general parts, each with a number of sub-chapters. The general headings include foods and normal nutrition, foods, feeding in infancy and childhood, and feeding in disease. In parts one and two, there has been made an adequate revision of the chapters on metabolism and digestion, particularly with a regard to the physiology of digestion; also an entire revision of the chapter on vitamines and, as well, a new chapter on metabolism in pregnancy and lactation together with the feeding of children over two years of age.

In part three, there has been a general overhauling of the material in the light of more recent literature.

About fifty pages have been added to part four, containing new material gathered from a careful revision of the subject of dietetics in disease as found in the publications of the last three years. In all parts of the book, obsolete material has been eliminated.

The work is a complete and exhaustive treatise and textbook on the subject and is easily rated among the three or four best which have ever been published. It is as highly recommended as was the first edition.

Infections of the Hand. By Allen B. Kanavel, M. D. 4th edition, thoroughly revised. Illustrated. Lea & Febiger, Philadelphia & New York. 1921. Price, $5.50.

There is hardly a subject more important to the surgeon and to the general practitioner than infections of the hand. Dr. Kanavel's guide to the surgical treatment of acute and chronic suppurative processes in the fingers and forearm has been easily the best and most popular work of its kind ever since the appearance of the first edition. In the present revision, the author has made use of the knowledge gained during the war upon gas bacillus and streptococcus infections. A chapter on the restoration of function in infected hands has been added.

The work begins with the experimental and anatomical studies upon which his deductions are founded. He advises that in a given infection the surgeon first read the chapter on "Diagnosis and Treatment in General" which will indicate into which group the particular case will fall and will direct to the proper sections of the book where cases of that nature are discussed in detail.

The book is wonderfully illustrated and should be in the library of every surgeon and of every general practitioner.

Diseases of the Skin. By Oliver S. Ormsby, M. D., Professor of Skin and Venereal Diseases, Rush Medical College. 2nd edition, thoroughly revised. Illustrated. 1166 pp. Lea & Febiger, Philadelphia & New York. 1921. Price, $10.00.

Dr. Ormsby's work is a most pretentious and exhaustive treatise on skin diseases covering 1166 pages and illustrated with 445 engravings and four plates in colors and monochrome. The first edition immediately gained a standing as a standard text which none excelled. In the second edition, the author has rewritten approximately 400 pages, has described fifteen new diseases and has brought the entire work up-to-date. Complete bibliographies are given and will serve as a guide to the investigative student in working up any particular subject. One misses some of the older illustrations but finds that they have been replaced by newer and better ones.

He covers skin diseases under nine different classes, in the consideration of which chapters are given on each. The main classes are hyperemias and inflammations, hemorrhages, hypertrophies, atrophies, pigment anomalies, new growths, neuroses, paresitic affections and diseases of the appendages. Dr. Ormsby, one of our near neighbors, is to be congratulated on the second edition of his splendid work.

Squint—Its Causes, Pathology and Treatment. By Claud Worth, London. 5th edition. 242 pp. P. Blakiston's Son & Co., Philadelphia. 1921. Price, $3.50.

The new edition of Worth's excellent book does not much differ in scope from its predecessors aside from some improvements, and the original classification in twelve chapters on binocular vision, convergent and divergent squints, etiology, amblyopia—congenital and acquired—treatment, heterophonia, operations, etc., has been retained.

Operation is required in the majority of neglected or inefficiently treated cases, very rarely in those in which efficient treatment is carried out from the start. The author has arranged his operative cases in three groups. The last, since 1905, consists exclusively of simple advancements. His advancement operation, which is described in detail, admits of accurate adjustment and the results have proved to be permanent. Paper and print are very good. C. Z.

The Eyeground in General Diseases. By Prof. H. Koellner, Wuerzburg. 185 pp. 47, mostly colored, illustrations. Julius Springer, Berlin. 1920.

This very well written compendium is intended to give to the practitioner quick orientation on a subject which, in the special ophthalmological handbooks, is treated too exhaustively for that purpose. Especial stress is laid not only on the interpretation and differential diagnosis of the ophthalmoscopic images, but also mainly on their valuization for the diagnosis and prognosis of the general affections.

After a technical introduction on ophthalmoscopy, anatomy and normal fundus, a general pathology of the fundus is given, setting forth how atrophy, degeneration, inflammation and disturbances of circulation of choroid, retina and optic nerve appear in the ophthalmoscopic picture.

In the special part, the typical ophthalmoscopic changes in different general diseases are presented with excellent colored pictures, based on the author's large experience in university eye clinics and on the abundant material of the Moabit Hospital at Berlin. To mention only a few, the chapters on arteriosclerosis, optic neuritis, papillitis, intracranial pressure, tuberculosis, etc., especially display how well the author has succeeded in solving his task. C. Z.

The Starvation (Allen) Treatment of Diabetes. By Hill and Eckman. 4th edition. Wm. H. Leonard & Co., Boston.

The unfortunate title of this little book carries an ugly connotation and has gotten the treatment in ill repute. To "starve" is to perish from hunger. Fasting is a better term, for it is a therapeutic measure. Properly this small book should be called "Graduated Diets in Diabetes" as the information in regard to treatment is meagre and insufficient. The absence of any real revision of the book since the earlier editions

renders its value slight. The case reports (all cases treated during the first few months of the Allen Treatment when it was little understood), show only how diabetics should *not* be treated. For our ripened experience has materially altered the method of applying the principles Allen enunciated.

The reader is warned not to follow the diets given in a "slavish manner", but as there is so little real information in the book, one could not do otherwise if he used them at all. The introduction of new foods and new receipts in the past five years is unnoticed. The impracticability of many of the diets for use outside of a large hospital is noteworthy. What patient wants to prepare for himself eight vegetables a day?

In a field where such excellent books are available it is a pity that this one was allowed to go to a fourth edition, especially since the authors did not thoroughly revise and rewrite it. H. P. G.

The Microscopy of the Living Eye. By Koeppe, Leonard, Halle. Vol. I: *The Microscopy of the Living Eye in Natural Light.* 310 pp. 62, partly colored, illustrations, and portrait of Prof. A. Gullstrand. Julius Springer, Berlin. 1920.

By the construction of the slit lamp by Gullstrand, an entirely new and important method of examination of the eye has been inaugurated. Foremost of all, Koeppe elaborated it systematically by his painstaking investigations of the normal and pathological anatomy of the living eye. Based on the results of his studies within the last six years, this work represents a complete theoretical and practical treatise of the intravital microscopy of the eye.

In the ophthalmological-optical section, the construction of the Nernst slit-lamp and its theoretical optics for the observation of the anterior segment of the eyeball, the general histological examination of it with the slit-lamp in focal light and the methods of examining the sinus of the anterior chamber are discussed.

The special part deals with the microscopy of the living conjunctiva, cornea, aqueous, iris and sinus. Here the value and superiority of the microscopy of the living eye is clearly emphasized in many instances, in which it allows of early diagnosis of pathological conditions which could not be recognized by the ordinary methods, e. g., beginning iritis, glaucoma, etc.

This valuable work will be greatly welcomed as a reliable guide in the introduction to this novel and important field of clinical methods. The external appearance of the book and the numerous illustrations are of superior quality. A second volume will contain the apparatus, technic and histology of the intravital posterior segment of the globe. C. Z.

Physical Diagnosis. By W. D. Rose, M. D., Lecturer on Physical Diagnosis and Associate Professor of Medicine in the University of Arkansas; Demonstrator of Clinical Medicine and Chief of the Medical Section of the Isaac Folsom Clinic; Visiting Physician Logan H. Roots Memorial (City) Hospital, Little Rock, Arkansas. Second edition. 309 illustrations. C. V. Mosby Company, St. Louis. 1921.

The second edition of Dr. Rose's text book on Physical Diagnosis is a very excellent book, having many new features to it over that of the first edition. While it deals primarily with the physical examination of the patient in diseases, it includes, also, a chapter on *radiographic* examinations by Dr. W. E. Mackey, which is well illustrated, and should impress upon the student, even in the earlier years, the importance and the possibilities, which careful *radiographic* examinations can contribute to a correct clinical diagnosis. The book constitutes a handy reference to students and practitioners and is, indeed, a compliment to Dr. Rose, and his splendid way of presenting these interesting and difficult problems. F. B. M.

General Pathology. An Introduction to the study of Medicine. Being a Discussion of the Development and Nature of Processes of Diseases. By Horst Oertel, Strathcona Professor of Pathology and Director of the Pathological Museum and Laboratories of McGill University and of the Royal Victoria Hospital, Montreal, Canada. Cloth, 357 pp., with illustrations. Price $5.00 net. Paul B. Hoeber, New York.

Dr. Oertel has presented this most interesting subject, in a manner and style that is most commendable and illuminating. His interpretation of the facts and problems in pathology renders the study and reading of pathology a pleasure rather than a burden. The arrangement of his subject in chapters is a simple and a logical one. The very reading of the introduction, and the historical facts about pathology absorbs your attention and impresses one with the commanding force of this author. A chapter devoted to the subject of heredity is well worth reading on the part of any physician and scientist. F. B. M.

Operative Surgery. By J. Shelton Horsley, M. D., F. A. C. S., Attending Surgeon, St. Elizabeth's Hospital, Richmond, Va. With 613 original illustrations. C. V. Mosby Company, St. Louis. 1921.

The reviewer of this book has been very much impressed with the large scope and excellent manner in which Doctor Horsley has presented and arranged his text book on Operative Surgery.

The text comprises 29 Chapters and covers the surgical subject as well as can be done in any single book. After all the excellent work that Dr. Horsley has done on the surgery of the blood vessels one will naturally expect to find a great deal of space devoted to these interesting questions and Dr. Horsley speaks with authority on them. One will also find a number of interesting and complete chapters on surgical drainage, surgical technique, operations on the neck, operations on the abdominal viscera, and, operations on the urinary organs which are most commendable.

The author is to be congratulated on this splendid text book as it will surely be a great help to medical students and to surgeons as a text and as a handy reference book. F. B. M.

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THE CLINICAL APPROACH TO SYPHILIS, WITH SUGGESTIONS FOR ITS REVIVAL AND DEVELOPMENT.

By John H. Stokes, A. B., M. D.

Archives of Dermatology and Syphilology,

Vol. 2, No. 4, October, 1920.

The first requirement for the development of proficient clinical service is a proficient syphilographer. His success must be measured by his ability to secure the co-operation of his colleagues. He must inspire them to contribute their diagnostic acumen to the study of some particular aspect of the disease. He must be able to check up the results of individual, diagnostic, therapeutic, and research procedures against the knowledge of the disease as a result of such experience. There is the necessity of the diagnostic instinct and finally, the ability to master data.

One of the most serious difficulties to be overcome in creating ideal clinical syphilology is the tendency of clinicians to fall into routine ways and "unconsciously carry in their minds a few syphilological *ipse dixits.*" An ideal syphilologist must have discernment and must not rely entirely on the more or less established *ipse dixits.* Another difficulty is the naturalness of subjectivism. Great effort should be made to overcome impressionism which is liable to creep in most unconsciously.

In time it is to be hoped that the field of syphilology will be able to obtain an estimate of the prognosis of syphilis very much in the same way as Dreyer obtains an estimate of the prognosis in tuberculosis.

With all the other demands made for development, the importance of records cannot be overlooked. An ideal record system for syphilis must contain definite information in terms of time and quantity on the following points:

1. Negative as well as positive findings.
2. The personal resistance of the patient to infection and evidence of individual peculiarities in the course of the disease.
3. Data from which to infer on definite knowledge in regard to the strain and peculiarities of the infecting organism.
4. The duration of the disease.
5. The type, duration, and intensity of treatment.

CHILD HYGIENE WORK OF GENERAL INTEREST.

A report on a year's work in child hygiene carried on by C. P. Knight, of the U. S. Public Health Service in co-operation with the State Board of Health of Missouri and with all private associations interested in the work shows results of much general interest.

In sundry cities a house to house canvass was made to determine the percentage of birth registration, the sanitary condition of the home, the amount of milk used, the relative income, and the relation between prenatal influence and infant mortality. The parents were greatly interested in the work and helped unhesitatingly. Better health supervision of young children and the correction of much improper eating and sleeping habits resulted.

In other cities school hygiene was begun by weighing and measuring the children. The results stirred up a friendly rivalry among the children to see which could first reach the proper average. Many mothers attended talks given to parent-teacher associations, and learned that when a child was underweight (7 to 10 per cent below average) and did not gain as he should (half a pound a month between 8 and 12 years of age) it was probably due to some physical defect or to faulty living.

With the mothers' consent underweight children were examined physically; and both child and mother were questioned in each others presence. Many physical defects and faults, such as late bed time and improper eating were disclosed. Suggestions as to how the troubles might be rectified were followed up by a public health nurse, who visited the homes and urged the remediable measures. Everywhere both parents and physicians warmly co-operated in the work.

Rural school surveys showed that though the country child had the advantage of fresh air and out-door life he usually sleeps with closed windows and subsists, especially in fall and winter, on pork, hot biscuits, gravy, and sorghum. In the summer he has home-grown vegetables. Adenoids and decayed teeth pass unnoticed or are neglected because of lack of facilities.

Demands from many parents that their children be weighed and measured led to the opening of numerous health centers, to which clinics for teeth, eye, and orthopedic defects were added. A community nurse began classes for mothers and expectant mothers, teaching them to care for themselves and for their babies. Follow-up work included monthly letters to expectant mothers and, later, a similar series on the care of the baby. By this means interest in birth registration was aroused and data obtained for supplying it.

CHIROPRACTIC PATHOLOGY.

A "chiropractor" of Waukesha, Wisconsin, emits (at advertising rates) the following words of wisdom on the pathology of gallstones and kidney stones:

Gallstones are due to an excessive amount of heat in the gallbladder which crystallizes the calcareous material in the bile and forms stones. This excessive heat results from the loss of calorific or heat control of nerves due to nerve pressure in the middle dorsal vertebral region. Adjustment of the causative subluxation restores the condition to normal. Renal stones are caused in the kidneys in the same manner.

This is the sort of medical "information" that is being fed the public by the cult calling itself "chiropractic"; and unfortunately the public is not in a position to realize its grotesque nonsense. But even to suggest that those who would treat human ailments should be grounded in certain educational fundamentals is to violate the tenets of "medical freedom"!—*Jour. A. M. A.*, Oct. 30, 1920.

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ORIGINAL ARTICLES

SOME CONTRIBUTIONS OF YOUNG MEN TO MEDICINE.*

BY MATT McGARTY, M. D.,

LA CROSSE, WIS.

"When the sun goes down below the horizon, he is not set; the heavens glow for a full hour after his departure,—and when a great and good man sets, the sky of this world is luminous long after he is out of sight. Such a man cannot die out of this world. When he goes he leaves behind much of himself. Being dead, he speaks."—*Harriet Beecher Stowe.*

This is indeed true in the case of our beloved late President, Henry W. Abraham, whom we mourn deeply and especially miss at our diamond jubilee. He was a man whose whole soul was bent on the public good, which Virgil once said was the greatest virtue.

This society appealed to Doctor Abraham as a great instrument for bettering conditions for the laity and profession in the state of Wisconsin. We feel the loss of the great service he would have rendered and in respect to him, follow the admonition given in his last editorial to the Journal,—An Obligation. "Let us then, as members of our Medical Society, which has done so much for us, put some push into our efforts to attend every meeting. And we should remember that attendance at our county, state and national meetings should always come first in our preference for they are the foundation stones of our existence as an organized profession."

Owing to the untimely death of Doctor Abraham, the honor and burden of becoming your President has fallen to me. As a young man I could not write anything new to you on a scientific subject, so I have chosen as my title, "Some Contributions of Young Men to Medicine."

It is customary to place the origin of medical science with the Greeks and to refer to Hippocrates as the "Father of Medicine." The word *father* carries with it associations of maturity, of dignity, and of wisdom accumulated through long years of experience. The ancient sign of the practitioners of the art of healing was a staff, such a staff as was used to assist the tottering steps of the aged, and it carried with it suggestions of the dim eyes and flowing white beard of extreme senility.

But when we come to examine the first records more closely, several surprises are in store for us. Medical science did not originate with the Greeks; its beginnings extend so far back as to be completely obscured by the mists which cloud the dawn of history. And Hippocrates was by no means the first Greek physician to attain distinction. With a start of surprise we are confronted by the venerable "father of medicine" as a bright-eyed, round-limbed boy learning the rudiments of the art which was to make his name immortal at his birthplace on the island of Cos. For upon this island stood a great Asclepieion, or temple to Aesculapius, the Greek god of medicine, and here, through the ages, had been accumulated the medical wisdom from every source, the surgical lore of Assyria, the herb formulas of Babylonia, and the charms and potents of ancient Egypt. The temple stood three hundred feet above sea level, mounting upward upon three artificial terraces formed on the mountain side, and the heights above were clothed with thick forests shutting off the much-dreaded south wind. Within the depths of this forest, a spring of very pure water, the fountain head of the good-sized brook which ran through the temple grounds, gave the spot supply which made it so famous as a "watering-place." Long before Hippocrates came into the world, this temple had become a great clinic frequented by sufferers from all manner of diseases, and thanks to the unremitting zeal of the archeologist, the modern physician can now get a fair idea of how his professional forbears carried on their medical work, although it is impossible to surmise whether it had reached its highest efficiency as a medical unit in Hippocrates' student days.

It is a temptation to linger over the picture of the eager boy among these inspiring surroundings, and as we do so, the vision of the revered, white-bearded "father of medicine" somehow fades away.

*Address of the President, State Medical Society of Wisconsin, Milwaukee, Sept. 7, 1921.

"New ideas," said Oliver Wendell Holmes, "build their nests in young men's brains." It was a young Hippocrates who carried his jewels of knowledge out from the island of Cos to give them added lustre by application and investigation in Thessaly, Thrace, the Black Sea countries, and even northern Egypt, and it was still a youthful Hippocrates who returned from this "grand tour" to establish himself as a teacher and practicing physician in the great clinic where he had formerly been a student. It is probable that most of the work on which his eminence is founded was accomplished before he was forty years old.

As we review the outstanding figures of medical history, we are told that Galen, after a careful training in such studies as rhetoric, philosophy and mathematics, began his medical studies at the age of seventeen and following the theoretical part of his education, he traveled to various cities offering further opportunities for study, lingering especially at Alexandria, which was at that time, the reign of the Roman emperor Hadrian—three hundred years after the death of Hippocrates—the great medical center of the world. He was twenty-eight when he returned to his native Perganum, in Asia Minor, where he established himself in practice, but even then he was widely known for his learning and professional attainments. We have no precise data as to the period of his life when he began the literary work on which his fame chiefly rests, but it is reasonable to believe that much of it was accomplished early in his career. We do know that the lectures which he gave on anatomy and physiology had attracted the attention of the Emperor before Galen had passed his thirtieth birthday, for he was barely thirty-two when his fame was extensive enough to warrant his removing from Perganum to the wider field offered by Rome.

Galen's influence on the history of medicine can scarcely be measured. Until Harvey discovered the circulation of the blood—almost fourteen hundred years later—Galen's writings were the sole authoritative medical treatises, and his opinions—rational and fantastic alike—were the only ones receiving any professional sanction. "No other physician of ancient or modern times has manifested to an equal degree such extraordinary industry as a writer and original investigator in a great variety of departments of knowledge. Although a great many of his works have been lost, those which have come down to our time are sufficient to constitute a library by themselves. There is scarcely a department which this great physician has not treated quite fully. From those (books) which we possess, it is permissible to conclude that he was a most skilful dissector and an extremely close and careful observer."

"Galen did not make any great mark in surgery. He followed Hippocrates in the distinction between healing by first and second intention, and, to promote healing by first intention by desiring a clean and dry wound, with good apposition for the exclusion of air. He successfully resected the sternum for caries, exposing the heart, and he excised a splintered shoulder-blade; moreover, with all his bent to speculative reasoning, we have no hint that he fell into the medieval abyss of regarding surgery as unfit for a scholar and a gentleman."

With the passing of Galen, came what Allbut terms, "the long night before the rise of the Arabian, Italian and French surgeons of the thirteenth and fourteenth centuries. By the division of the Empire, by the degradation of morals, to which even Pliny and Galen had begun to bear witness, and by the inroads of barbarians, arts and sciences were trampled under foot in the West until by the iron scaffold of the Faith, a new society should be erected * * * Medicine gradually sank not into sterility only, but into deep degradation; for the wholesome discipline of practical surgery had fallen off."

Not until the opening of the sixteenth century do we find any young men struggling to get free from the quagmire into which medical science had fallen. At this time, "although science and learning were on the increase * * * no positive advance had been made in medicine except in the addition of chemical agents to the materia medica, and by the contributions to the knowledge of the human body * * * It had long been a heresy in medicine to question the authority of the incomparable Galen, his drawings and descriptions of anatomy had been servilely copied, and no attempt made to verify them or to improve upon them until that time."

But now a young man came forward who did dare to question them. This was Andreas Vesalius, born at Brussels in 1514. He came of a family of physicians and so early did he show a special talent for his inherited profession that at

the age of twenty he was giving lectures on anatomy at the University of Louvain. "Those lectures constituted the very first attempt at anything like systematic instruction in anatomy that is known to have been made at that ancient university. It was while he was engaged in this work that Vesalius, in order to become the possessor of an entire human skeleton—a thing of which he felt a very great need—ventured to remove from the gallows, outside the city, the cadaver of a criminal. This, as Hasser declares, was an act of great boldness and full of peril." At the age of twenty-three, Vesalius accepted from the Senate at Venice the appointment of professor of anatomy at the University of Padua. "When he entered upon this new work, he felt considerable uncertainty as to the correctness of the anatomy that he was then teaching, and it is therefore easy to understand why his first three lectures were based entirely upon the teachings of Galen; but before he had finished the third of the series, his mind was made up that he would cut loose from the anatomy of the ape"—to which Galen had wholly confined himself—and turn his attention to "that of the human subject, as it was then being revealed to him more and more perfectly from his own dissections."

"The stock of knowledge which he had thus begun to accumulate, increased steadily until, after seven years of teaching at Padua, Bologna and Pisa"—where he gave courses in anatomy and demonstrations on the cadaver—"he declared tha he was ready to publish his great treatise on anatomy—and the book finally appeared in June 1543, before it's author had attained his twenty-ninth year. "Vesalius may rightly be considered the founder of modern anatomy for he was the first to furnish correct information, based on actual dissections of the human cadaver, respecting quite a large number of the more important anatomical relations; and by this very fact he won the further credit of having dealt the first effective blow towards the dethronement of Galen, the man who, next to Hippocrates—had exercised by his teachings in nearly every department of medical science, an almost despotic sway over physicians for considerably more than one thousand years. At this distance, it is hard to realize what a startling effect was produced by the announcement of the discovery of so many errors in Galen's scheme of anatomy. Albert von Hallen, the great authority on medical literature, speaking of Vesalius' book, calls it "an immortal work." and although its title *De corporis humani fabrica* "would lead one to suppose it deals only with the human body, an examination of its contents reveals the fact that it contains in addition quite full information regarding physiology and pathological anatomy, as well as many details relating to comparative anatomy."

When Vesalius had once blazed the trail, others dared the fierce storm of opposition which was raised by the publication of his treatise, and proceeded to widen the path he had indicated. The names of two of these young workers in the field of original research have come down to us attached to particular organs which they were the first to describe with scientific accuracy—Gabriele Fallopius and Batholomaeus Eustachius, both natives of Italy. Fallopius was born at Modena in 1523, and in 1547 we find him professor of anatomy at the University of Pisa. He died at the age of forty, having published but one treatise, but, during his brief lifetime, he made many important anatomical discoveries, especially in relation to fetal osteology, and the distribution of the blood vessels.

Eustachius, like Fallopius, was a professor of anatomy, although he did not attain that position quite so early in life. But long before he was forty, he was ranked as one of the foremost physicians of his day, and his writings on anatomy and physiology are valuable even now. The designation of the Eustachian tube bears witness to his zealous study and his demonstrations concerning the structure of the head.

The influence of Vesalius upon the art of surgery during the Renaissance period is aptly illustrated in the life work of Ambrose Pare, who, starting in Paris at nineteen as a poor barber's apprentice, before he was thirty, was ranked as the greatest surgeon in Europe. For the barbarous practice of treating gunshot wounds—a new injury in his day—with dressings of boiling oil, he substituted a simple bandage. "To this was added the recommendation and practice of the ligature of the arteries at the divided extremity (in amputations), with the inclusion of a small portion of the muscular tissue." Ligation of the arteries had been known in ancient Greece, and from thence the practice had descended to the Arabians. The idea, however, seems to have come

to Pare independently, though he never asserted any originality in regard to it. His use of ligation in connection with amputations however, was entirely unprecedented, as he also employed it instead of cauterization, which had before then been the regular method of stopping hemorrhage. Dieffenbach compares the value of ligation in surgery to that of printing in general culture, and of the railroad in commerce." Pare may truly be said to have introduced a wholly new era in surgery.

Among the students who worked under Fallopius was Frabricius, who later obtained great celebrity as a teacher and became the master of a certain English lad, William Harvey by name, who went out from his clinic to inaugurate the age of modern medicine by his demonstration of the circulation of the blood.

"The observation that the blood is in motion may have occurred to the first primitive man who ever cut open a live animal or saw a wounded artery. The idea that this motion is along a definite path may well have been entertained by any ancient Egyptian or Greek, as well as by some hypothetical native of Muscovy or Illyria in Harvey's day. Galen's false concept about the pores in the ventricular septum diverted all speculation into the wrong channels for fourteen centuries, and even Servetus, who came nearer the truth, could only admit that some (not all) of the blood takes a circuit through the lungs. In the drawings which Vesalius made, indicating the close proximity of the terminal twigs of the arteries and veins, the truth about the circulation was literally staring in the face of any observer who had eyes to see or wit to discover it. Yet anatomists continued to see everything in the light of Galenical prepossessions." Harvey it was who "first made a careful review of existing theories, showing their inadequacy and then proceeded by experimental vivisection, ligature and perfusion, to an inducive proof that the heart acts as a muscular force-pump in propelling the blood along, and that the blood's motion is continual, and in a cycle. The *crux* of Harvey's argument—that the actual quantity and velocity of the blood as computed by him, makes it physically impossible for it to do otherwise than return to the heart by the venous route—was the first application of the idea of measurement in any biologic investigation, and, had he chosen to express his discovery in the language of the algebra (by using the symbols of inequality) it would long since have taken its proper place in the application of mathematical physics to medicine. The importance of Harvey's work, then, is not so much the discovery of the circulation of the blood, as its quantitative or mathematical demonstration. With this start, physiology became a dynamic science."

Harvey's discovery was rounded out and completed by the thorough investigation of the capillary circulation made by Leeuwenhoek the microscopist, and the demonstration of the capillary anastomosis between the arteries and veins which Malpighi first observed in 1660. Leeuwenhoek cannot be reckoned among our young men, although his labors—which only ceased with his death at the age of ninety-one—undoubtedly had their beginnings in early boyhood. But Marcello Malpioghi, born in 1628, was but a little past thirty when he gave to the world in rapid succession his discoveries regarding the capillary circulation, the existence of the blood corpuscles, of the lung cells, and finally of the pigmentary layer of the skin, which furnished the first explanation of why the Etheopian cannot change his skin. And the final proof of Harvey's conception was given by a mere boy, for William Cowper was only twenty-one, when in the year 1687 he saw the passage of the arterial into the venous current in the mesentery of a cat.

The invention of the miscroscope sent out a veritable flock of "new ideas" to nest in the brains of the young medical men of that time. In all branches, there was eager research and unremitting activity, so that new discoveries became almost everyday occurrences.

Regner de Graaf is twenty-three when we find him describing the nature and use of the pancreatic fluid, and at twenty-seven he published a classic account of the testicle. In 1672, when he was thirty-one, his work on the ovary appeared, containing the first account of the structures which Heller in his honor called the Graafian testicles. Richard Lower, the English country doctor, was thirty-four when he succeeded in transfusing the blood of one animal to another, and Robert Hooke the same age at the time he put his hand to the bellows inserted in the open thorax of a dog, by which he kept the animal alive without movement of either lungs or chest, thus

proving that the essential feature of respiration is not in its intrinsic movements, but certain blood changes which take place in the lungs because of it.

The *Dispensatorium* of Valerius Cordiez, which came out at Nuremberg in 1535, is of interest as the first real pharmacopeia ever published, but it takes especially high rank as a contribution of a young man to medicine, inasmuch as the author was just twenty when it appeared in print, and it represented the labors of many years. Cordiez is best known to medicine for his discovery of sulphuric ether (eleum dulce vitrioli) in 1540, when he was twenty-five, and his death four years later cut short what might have been a career of remarkable fruitfulness. His commentary on the works of Dioscoridas—posthumously published—not only describes some five hundred new species of plants, the ardent search which eventually cost him his life, but recreates the species listed by Dioscoridas in terms of modern botany.

It is quite possible for a man to contribute nothing absolutely new to the progress of science, and still by his employment and elucidation of what has already been advanced to leave a lasting impress upon the history and progress of that science. Such a man was Hermann Boerhaave, perhaps the most brilliant, honored and successful practitioner of his time. Born in 1668, his long life carries him well into the eighteenth century, yet he still has a right to a place among the "young men" as he reached eminence before he was thirty-five. Osler speaks of him as "the mighty Boerhaave of Holland who revolutionized clinical observation." He was a man, "who when we contemplate his genius, his condition, the singular variety of his talents, his unfeigned piety, his spotless character and the impress which he left, not only on contemporary practice, but on that of succeeding generations, stands forth as one of the brightest names on the page of medical history and may be granted as an example, not only to physicians but to all mankind."

The fame of the eminent and estimable Boerhaave must, however, pale before that of his pupil, Albrecht von Haller, who, as Bostock has expressed it, "has been not inaptly termed the father of modern physiology." Haller was an infant prodigy who is credited with composing Latin verses and a grammar of the Chaldeen language at ten years old. In 1727, when he had arrived at the mature age of sixteen, he won an argumentative victory over his instructor, Professor Coshivita, who contended that the lingual vein was a salivary duct. Before he was thirty, his fame as a poet, a botanist, an anatomist and physiologist had traveled throughout the civilized world. He early left his native city of Berne, Switzerland, to become the lodestar which drew students from all over Europe to the University of Gottingen, which the German king of England, George the First, had recently established. "He was equally eminent as an anatomist, physiologist and botanist, wrote poems and historical novels, carried on perhaps the most gigantic correspondence in the history of science, and was the principal founder of medical and scientific bibliography, his patient arduous labors in this field being marvels of their kind."

Haller's greatest contribution to physiology is generally conceded to be his theory of irritability and sensibility as specific properties attached respectively to the two great systems of the animal frame, the muscular and the nervous, to which either separately or conjointly, may be referred all the phenomena of the living body. But perhaps a still more important service which Haller rendered to science was the example which he held out of carefully abstaining from all opinions founded upon merely speculative grounds, and of deducing his general principles exclusively from experiment and observation. He gave an impulse to science no less by the actual discoveries which he made, than by the spirit with which he conducted his researches, so that we may regard the publication of his *Elements of Physiology* as having introduced a new era into medical science.

No small contribution to medicine was made by two anatomic artists, Berhard Albinus and Antonio Scarpa. At twenty-one, Albinus was teaching anatomy and surgery at Leyden, and the beautiful drawings making up his atlas of the bones—the first of a long series of anatomical pictures—first appeared when he was twenty-six. Scarpa was not only a great anatomist and surgeon, but an orthopedist and ophthalmologist as well; as an anatomical draughtsman he has never had a superior. Though his labors and influence began very early—his first anatomical treatise with its wonderful illustrations coming out before he was twenty-five—he extended them throughout his long life of eighty-five years.

Foremost among the men of this period who early in their careers made important contributions to surgery, were William Hunter, the Scotch gynecologist and obstetrician, and his younger brother John Hunter, whom Garrison calls the founder of surgical pathology, and a pioneer in comparative physiology and experimental morphology, and ranks with Pare and Lister as one of the greatest surgeons of all time. Gorton says that it is to the genius of John Hunter that mental science owes the first conception of the plurality of mental functions in the brain, to which Gall, in all probability, owed his grand generalization of a few years later.

The most engaging personality, as well as one of the remarkable intellects of this time, is revealed to us in John—or in his native Italian—Giovanni Morgagni, hailed by Virchow as the "father of pathology." "As a medical student, scarcely twenty years of age, he revolutionized medical observation by studying his fatal cases with a comparative investigation of their clinical symptoms and the post-mortem findings. This had been done before but mainly with the idea of finding out the cause of death and the principal reason for the illness which preceded. Morgagni's investigations in pathology consisted in tracing side by side all the clinical symptoms to their causes as far as that might be possible. This looks so simple now as to be quite obvious, as all great discoveries are both simple and obvious once they have been made; but it takes a genius to make them, since their very nearness causes them to be overlooked by the ordinary observer.

A bare recital of the facts of Morgagni's life reads like the product of a novelist's imagination. From sixteen to twenty—he studied at the University of Bologna,—the foster mother of so many geniuses—and was the favorite pupil and student assistant of the famous Valsalva, then at the zenith of his career. Before the pupil had become of age, he was filling some of the master's lecture engagements and after receiving his degree, Morgagni—though still a youth—became an assistant professor of anatomy at Padua, at that time the most important post in that great medical school, thus becoming one of the leading educators of the world. "The estimation in which Morgagni was held by his contemporaries can be judged from the fact that twice when invading armies had entered the Emilia and laid seige to Bologna, their commanders—as in old Greek history did the Greek generals in regard to Pindar and Archimedes—gave orders that special care was to be taken that no harm come to Morgagni, and that his work was not to be hampered. The great medical scientist, whose work was to prove the foundation of modern pathology, and this be the source of more blessings to mankind than ever even he dreamed of, remained in the midst of the reverence and gratitude of his generation, one of those beautifully simple characters whom all the world delights to honor."

Side by side with the advances in pathological study made possible by Morgagni, came the recognition of the nature, and the first glimmerings of light in regard to the diagnosis and treatment of pulmonary tuberculosis. The glory of making possible an early diagnosis of this condition belongs entirely to two young men, Auenbrugger of Vienna, and Laennec of Paris. To Auenbrugger, whose work was done nearly a century before that of Laennec, must be given the credit of having first approached the problem of the differentiation of diseases of the lungs from one another by methods that were so objectively practical that every practitioner of medicine could, after becoming expert in their employment, use them with absolute confidence in his diagnosis. His little book—published in 1751 when he was twenty-nine years old—was the first record of the use of immediate percussion of the chest in diagnosis, based upon observation verified by post-mortem experience. But, as Dr. Weir Mitchell has so well expressed it, "a certain sadness surrounds these stories of medical discovery. The fate of Auenbrugger, the inventor of percussion, and of his little book, so small, so terse, so wonderful is—pitiful.

Auenbrugger lived to see his famous colleague DeHaen, write his fifteen volumes without a word on percussion. Van Swieten did it no greater justice. In his huge history of medicine, Sprengel mentions it as rather subtle. Yet were the contents of this book of twenty-two pages more practically valuable to man than all these men wrote, or all the results of the vast and bloody campaigns through which it slept, until, in 1808, one year before the grave, this contented, music-loving German died at eighty-seven, Corvisart translated it into French and proclaimed its undying value to a waiting world.

"The poet is grieved by the indifference of his

contemporaries, but the physician seems to be made philosophical by the steadying influence of everyday work, so that not Marcus Aurelius could have been more contented than Auenbrugger, whilst half a century passed by neglectful and would not see the more than royal gift he offered to mankind."

In reading Auenbrugger's observations upon the percussion of lung cavities, it is evident that he was very near the discovery of auscultation. This remained for Laennec to carry out however. To him, we must accord the honor of definitely fixing the clinical picture of pulmonary tuberculosis, and by means of his discovery of auscultation, separating it from all like affections of the lungs.

Laennec began to practice and also to teach medicine at the age of twenty, but he was past thirty when he devised the instrument which came down to our time with only slight modifications, —the stethoscope. But the really important part of his work was not so much the invention of this instrument, as the exact observation of the changes of the breath sounds that could be noted with it in various forms of chest diseases. Henry Roger said, "Laennec in placing his ear on the chest of his patient heard for the first time in the history of human disease the cry of suffering organs. Henceforth, the practitioner of medicine, endowed with one more sense than before, and with his powers of investigation materially increased, could read for himself the alterations hidden in the depths of the organism. His ear opened to the mind a new world in medical science."

Unlike Auenbrugger, the value of Laennec's discovery was recognized at once, and during his brief lifetime,—for by a curious irony of fate he died of tuberculosis in his forty-fifth year—he enjoyed great distinction, both as a physician and scientist. But he resembled Auenbrugger in his reticence and modesty, and is said to have prided himself far more on his abilities as a horseman, than on his skill as a master of medicine. The teachings of this great Frenchman had an immediate outcome in the brilliant clinical work of three physicians of the Irish school, Graves, Stokes and Corrigan. At the age of twenty-five Robert James Graves became chief physician to the Meath Hospital, and one of the founders of the Park street school of medicine. His clinical lectures which Trousseau read and re-read with highest admiration, introduced many novelties, such as the "pin-hole-pupil", timing the pulse by the watch, and discarded the old lowering or antiphlogistic treatment of fevers. He also left early accounts of angioneurotic edema and scleroderma, and fourteen years later he published a description of exophthalmic goitre so admirable that the disease still goes by his name.

Graves' colleague, William Stokes, one of the few physicians ever honored by the Prussion Order, "pour le merit", completed his famous treatise on diseases of the chest at the age of thirty-three. This work, with his others on the heart and aorta, and his celebrated account of the Stokes-Adams disease won him lasting fame.

Sir Dominic John Corrigan, the first to throw into relief the characteristic receding or "water-hammer" pulse in aortic regurgitation, and also the first to suggest that a flagging heart may be stimulated by tapping the precordial region with a hot spoon, wrote his original description of insufficiency of the aortic valve (with a superb plate) when he was only thirty years of age. This work is considered the classical account of the disease.

It was just before Laennec was born, and while the then elderly Auenbrugger was still waiting for a tardy appreciation of his genius, that Antoine Laurient Lavoisier, thirty years old, published his *Opuscules, Chemiques et Physiques (Physical and Chemical Essays)* which was the real beginning of modern chemistry. His discovery that *Phlogiston* (flame) was not *caloric*, but that heat was the result of the oxidization of carbon and other substances, according to Cuvier, the celebrated naturalist, "belongs to Lavoisier in his own right, and forms the basis of the new chemical theory." Lavoisier perished on the guillotine during the Reign of Terror in 1794, but his spirit still lives among us; the new chemical nomenclature which he introduced to replace the absurd titles of the alchemists being still in use in every laboratory.

One hesitates to say as to whether or not Edward Jenner may be properly included among the young men of the eighteenth century who placed indestructible milestones along the road of medical progress. Jenner was past fifty when his introduction of vaccination, in place of inoculation for the small-pox, became an established practice, and his first vaccination was not performed until his forty-sixth year. Yet his observations and experiments had been carried on from the time he

came under the influence of John Hunter, just at his entrance into manhood.

As we pause to survey the history of medicine during the nineteenth century, so numerous are the "young men who saw visions" that time is lacking even to mention them. It is impossible to speak even in a cursory way of the donations given by men in the new world. In the words of William Osler, "the reign both of guesswork, theorizing and of grouping empirics was coming to an end, and the first great blow was delivered in the first year of the century. France now came to the front where other countries had thronged. Bichat—a genius who wore himself out at thirty-one, as did Clifford at thirty-four—published the year before his death, in 1801, a work on general anatomy, in which he remade the entire science by showing that the different organs have membranes and tissues in common, and therefore that the disease was in the constituent tissues and not in the organs as such. This not only simplified anatomy and physiology in much the same way that the alphabet simplified hieroglyphics, but threw the investigations of pathological changes into an entirely new channel."

The publication of von Helmholtz's *Conservation of Energy* occurred when that gifted physician and physiologist was only twenty-six, and he was barely thirty when he invented the ophthalmoscope. And just at this time, German ascendency was further established by the studies in cellular pathology which Rudolph Virchow—who was exactly the same age as von Helmholtz—began to give to the world in the *Archiv* with which we are all so familiar. When Virchow was only tweny-seven, he was selected by the Prussian government to investigate the epidemic of typhus fever then raging among the weavers of Upper Silesia, and his report is styled by Garrison as not only a demand for hygienic measures and a large charity for those unfortunates, but as an actual brief for democracy and freedom, so bold indeed that he fell from the favor of the autocratic Prussian government, and lost his professorship at the University of Berlin because of his "anti-Prussion" views. Today there is a certain satisfaction in recalling this episode, so illustrative of his youthful inclinations.

At the same time these two young Germans were rising to eminence, another — six years younger—was rapidly taking his place among the greatest physicians of all time. This was the English Joseph Lister, son of a wine merchant. When he was thirty-three, Lister became professor of surgery at the University of Glasgow, and there it was that he put into practice his theory of antiseptics, destined to revolutionize the entire practice of surgery. Louis Pasteur—five years older—had been carrying on experiments in sterilization in his French laboratory, and although Lister realized the impossibility of employing Pasteur's methods in the treatment of wounds, he was lead on to try chemical antiseptics to accomplish the same ends. Antiseptics are now largely discarded, but the principle of avoiding sepsis, which Lister was the first to establish, remains absolutely unchanged.

Time is lacking to extend the list of young men who have made the last century the greatest of all ages of medicine. Some of them are still here, and their labors bid fair to make our own time more memorable than any which has gone before; many of them have laid down their instruments and their pens, and have passed beyond our sight, but the evidence of their achievements is everywhere around us. Surely this is the day of the young physician, more even than any upon which the sun of the past has set, for he is truly

"The heir of all the ages"

and before him lie unlimited possibilities of power and knowledge and usefulness as yet undreamed of by the wisest and most far-seeing of us all. Remembering the words of Tyron Edwards: "Some men are born old, and some never seem so. If we keep well and cheerful we are always young, —even when years count us old."

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PERIPHERAL NERVE INJURIES IN CIVIL LIFE.*

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Peripheral nerve injuries are not uncommon and because of the disability which follows such injuries they demand thoughtful consideration. They are often neglected, because, even after successful suture, function returns but slowly and frequently patients changing location pass from one surgeon to another so that a continuous well-directed line of after-treatment is not carried out. The experience in nerve surgery which has been gained after an observation of a large number of war injuries can be applied with advantage to those observed in civil life. The type of injury occurring in civil life naturally differs greatly from those noted in war wounds, but the same principles must be followed in each.

Difficulties are encountered in differentiating clinically between anatomic division of a nerve and physiologic interruption of the nerve current. There is no difficulty as a rule in differentiating between partial and complete lesions. In those cases in which all the symptoms of a complete lesion are present and a bulb can be felt upon the distal end of the proximal segment a diagnosis of anatomic division of the nerve can be made, excepting, of course, those cases of partial division in which a lateral neuroma forms. Cases are frequently encountered in which the differentiation between anatomic division and physiologic interruption of the nerve current cannot be made. It is customary, or at least it has been customary, when an absolute diagnosis could not be made to postpone operation, delay being thought advisable in order to determine whether function might not return. During this period of waiting muscles might atrophy, trophic changes occur and the small joints of the hand, if the nerves of the upper extremity were affected, might become partially anchylozed. I believe that an early exploratory operation is indicated in such cases. If the nerve is divided a suture may then be performed; if nerve conduction is interrupted by constricting bands or callus, the nerve can be freed of compression and placed in a new bed formed from healthy non-bleeding muscle, conditions favoring an early return of function thus being provided for.

Some of the most interesting lesions of nerves occurring in civil life are those associated with fractures. Injuries of the musculospiral nerve predominate, this nerve being most frequently injured in its course through the musculospiral groove. The nerve may be contused or divided by the sharp ends of the fragments at the time of injury or it may be included in the callus as the fracture repairs. The history of the time of the onset of the paralysis will give a clue to the nature of the injury.

Complete interruption of nerve conduction may be caused by adhesions. These adhesions, often draw the nerve out of its course, causing the nerve to loop or bend upon itself. The musculospiral nerve may, however, be injured in the lower part of its course. Recently I operated upon a patient who five years before had sustained a fracture of the left humerus. The fracture was comminuted. It occurred in the lower third of the humerus, the lower end of the upper fragment being driven forcibly forward. This patient presented symptoms of median and musculospiral paralysis. The supinator longus and extensor carpi radialis longus and brevus, contracted voluntarily, indicating that the nerve had been injured below the point at which the branch to these muscles is given off. The musculospiral nerve was exposed in the antecubital fossa. It was found to be divided, a large neuroma having developed upon the distal end of the proximal segment. An end-to-end suture was performed. I believe that the median nerve, which was not exposed at this operation, was also divided by the sharp edge of the upper fragment. Operation had been postponed for years in this case partly because the return of function in the supinator longus and the extensors of the wrist had indicated some ability to repair and partly because the patient left the country shortly after the injury

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and could not have the surgical aid which he required.

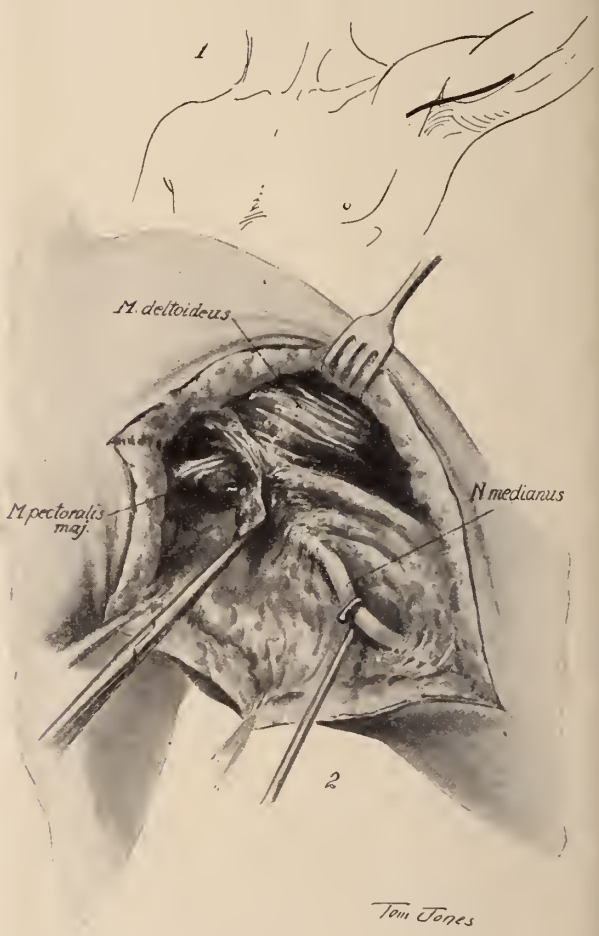
It is the inability to differentiate between physiological interruption of the nerve conduction and anatomic division which renders exploratory incision imperative.

If the loss of function is due to compression by scar tissue function may be quickly restored after removal of the constricting band or tissue. I have seen beginning restoration of the function in muscles supplied by the musculospiral nerve within 10 days after a constricting band was removed and neurolysis performed. In this case, the paralysis which was as complete as after anatomic division had persisted for six months.

Injuries of Nerves Associated with Fractures:

While the musculospiral nerve is the one most frequently injured in fractures, injuries of other nerves are occasionally observed. I recently operated upon a boy of fifteen who some weeks before had sustained a separation of the upper epiphysis of the humerus. The force producing this separation was relatively great. The fracture was promptly reduced but it was soon discovered that the boy could not use his fingers. He developed all the symptoms associated with a combined median and ulnar nerve palsy. The conditions did not improve with time and the lower part of the brachial plexus was exposed. The upper end of the lower fragment had a sharp projecting end and when the dislocated fragment was brought back into position the brachial artery had been drawn by this fragment into the line of fracture. The artery could be traced into the healed fracture and no pulsation could be found in the artery below the fracture. The lower part of the plexus had been twisted one hundred and eighty degrees, for the outer head of the median was found to the inner side. The ulnar nerve was imbedded in dense scar tissue which was applied rather closely to the line of fracture. The median nerve could be rather easily separated from the scar, but resection of the ulnar nerve followed by end-to-end suture was necessary. When last heard from, median nerve function, as was expected, had returned but there was only partial return of function in the muscle supplied by the ulnar nerve.

Some of the nerve injuries associated with fractures are so rare as to be almost unique. The following is such case: The patient, a young man of about 21, was cranking an automobile and sustained a fracture of the radius when the machine kicked. The fracture was reduced and dressed. The reduction was very satisfactory for there is no deformity. Immediately after the fracture,



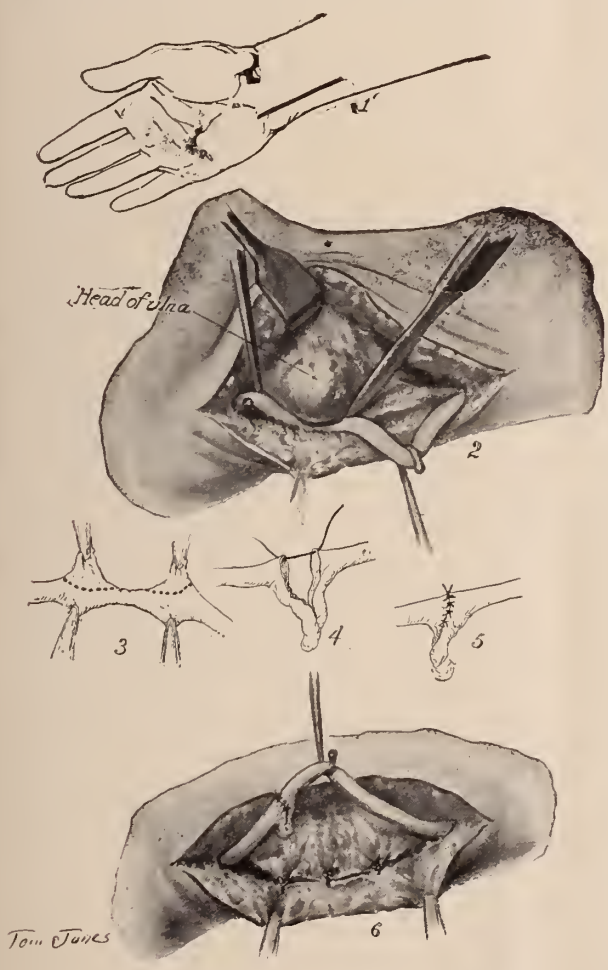
Injury of the medium and ulnar nerve associated with a fracture of the upper end of the humerus. The brachial artery was caught by the sharp upper end of the lower fragment and drawn into the line of fracture. The artery was obliterated below this point. The ulnar nerve was so much damaged that resection and suture was necessary. The median nerve was caught in the scar and twisted 180°. Rapid return of function occurred in the median after neurolysis.

however, the symtoms of ulnar nerve paralysis, with the typical sensory disturbances, muscular atrophies and deformities developed. I first saw this patient one year after the injury, at which time an exploratory operation was advised. The ulnar nerve was exposed above the wrist and it was found that the head of the ulnar had been displaced when the radius was fractured. When this displacement was reduced, the ulnar nerve had been drawn back of the head of the ulna to the dorsum. The nerve had been partially torn. Some

filaments remained intact and a partial suture was performed after the scar tissue had been resected. Operation had been delayed in this case, in hopes that spontaneous restoration of function would occur, an impossibility because of the nature of the lesion.

Subcutaneous Injuries of Nerves:

Subcutaneous injuries of peripheral nerves are uncommon. I have seen three and in these three cases the external popliteal nerve was injured. The mechanism of injury differed in all three and the findings at operation were also different. In the first case that I observed the injury was caused



Injury of the ulnar nerve associated with fracture of the radius and dislocation of the head of the ulna. When the dislocation of the head of the ulna was reduced, the ulnar nerve was caught and pulled to the back of the ulna. The nerve was partially severed. Partial resection and suture of the ulnar nerve performed.

by the leg being caught between a moving motorcycle and a truck. The patient was riding a motorcycle and grazed the wheel of a truck in passing. He was thrown from the motorcycle and when he attempted to rise he could not. An immediate paralysis of the external popliteal nerve was noted. The skin was not cut. No operation was attempted at this time. The paralysis has persisted for seven months when an operation was advised.

The external popliteal nerve was exposed at the point where it passes around the head of the fibula, for according to the patient's statement this was the point at which the force was applied. The nerve was intact. The external popliteal nerve was then traced upward. At the upper part of the popliteal fossa a large neuroma was found, but the nerve was not divided. Evidently at the time of the injury the nerve fibers had been pulled upon until they had ruptured at some distance above the point at which the force was applied. Following a hemorrhage into the nerve a definite neuroma had formed which consisted, so far as could be determined by palpation and naked eye examination, of dense fibrous tissue. This dense tissue was resected, but the resection had to be made at some distance on either side of the enlargement, for fibrous tissue passed some distance on either side between the funiculi. An end-to-end suture was made with difficulty even after the segments were mobilized and the knee acutely flexed. I have not been able to determine the results of the operation.

The second case of subcutaneous injury occurred in a boy who fell upon uneven frozen ground. As he fell, he struck upon the outer side of the left leg at the point at which the external popliteal nerve winds about the head of the fibula. He lost the use of the muscles supplied by the external popliteal immediately after the injury. When this patient was examined a definite neuroma could be palpated upon the external popliteal nerve. This is a short distance above the point at which the external popliteal nerve curves around the head of the fibula. An operation was performed six months after the injury and the external popliteal nerve was found to be completely divided. A typical terminal neuroma had developed upon the distal end of the proximal segment. This neuroma was resected and an end-to-end suture performed after the nerve segments were mobilized and the knee flexed. After one year there are very definite evidences of return of function in the muscles supplied by the external popliteal nerve.

The last case of subcutaneous injury of the external popliteal nerve which I observed differs from the two just mentioned. The patient, a postman, was shoved off a moving street car. As he struck the pavement the left foot was wrenched. He suffered considerable pain and noticed that he was unable to raise the foot. The loss of motion and sensory disturbance associated with external

Loss of substance of the musculo spiral nerve in which a nerve transplantation was attempted without result. Transplantation of the flexor carpi radialis to the extensor tendons was then attempted with satisfactory results as patient is able to extend the wrist and fingers.

popliteal lesions developed immediately. Atrophy of the anterior group of muscles was then noted. When I palpated over the course of the external popliteal nerve, I thought that I could feel a neuroma upon it, just above the point at which the nerve winds around the head of the fibula. At the operation no neuroma was found. The nerve which did not seem to be altered in appearance to any great extent, was surrounded in the lower part of its course by some delicate adhesions. These did not seem to me to be enough to explain the loss of function and I thought it probable that the injury resembled that noted in the first case of subcutaneous injury mentioned above. The external popliteal nerve was then exposed up to the point at which it and the internal popliteal nerve leave the great sciatic, but no change was found. It does not seem possible that the delicate adhesions which surrounded the nerve and were undoubtedly pathologic could account for the interruption of nerve conduction, but no other changes were found. The nerve was dissected free of adhesions and neurolysis was performed. Fourteen months after this operation there has been no return of motion in the muscles supplied by the external popliteal nerve. A definite Tinel's sign can, however, be elicited over the lower part of its course.

These cases are cited to illustrate some of the rarer lesions of peripheral nerves occuring in civil life. Divisions of peripheral nerves in clean cut wounds caused by knives, glass, pieces of tin or sharp metal are not uncommon. Often these injuries are unrecognized or improperly handled. Every injury in the neighborhood of a peripheral nerve should be carefully examined for the symptoms and signs associated with peripheral nerve division. If the nerve is divided a primary suture should be performed at the time that the wound in the other soft parts is closed.

If the nerve is divided by a sharp cutting instrument, it will not be necessary to remove much of the ends, for the hemorrhage as a rule does not extend any distance on either side of the point of division. It is well usually to resect a little of each end, that is, to perform a moderate debridement, in order that the chances of infection may be reduced and that clean cut, but little contused funiculi may be exposed. I believe that it is generally recognized that the nerve suture which will be most successful, is the one in which accurate end-to-end suture without axial rotation is performed. It matters not what our ideas concerning the internal topography of peripheral nerves are, accurate anatomic repair should be assiduously sought. The same principle applies to surgery in general—accurate anatomic repair should always be sought. Hemorrhage from the cut ends of the nerve should be controlled, in order to prevent the development of a hematoma be-

tween the sutured ends. It may be necessary in some cases to use a transfixion suture of catgut. such a suture to approximate the ends evidently does not interfere with nerve repair. When the ends are approximated, the epineurium should be carefully closed with interrupted sutures of fine silk or catgut. Fine beeswaxed silk makes an excellent suture for such silk runs easily and can be easily tied. The epineurium should be closed for the developing neuraxes tend to stray into the surrounding tissues and may form with the surrounding tissues a dense scar which may seriously interfere with nerve repair. Primary suture should be attempted in nerve injuries associated with incised wounds and even in cases in which infection may develop, nothing is lost if it does occur for the nerve ends may be anchored close to each other and more easily found when the secondary operation is attempted.

In nerve injuries caused by missiles travelling with high velocity the nerve changes are more marked than those occurring in clean cut incised wounds. A bullet travelling with high velocity seems to fuse the elements entering into the formation of the nerve. Often the nerve seems to have been upon a stretch when hit. The ends may be widely separated, they are softened and the softened and hemorrhagic tissues extends well up into either segment and a wide resection of the nerve ends must be made before an end-to-end suture is attempted. If healthy appearing funiculi are not exposed before the suture is made, scar tissue will develop at the suture line, the developing neuraxes will be blocked and the suture will be unsuccessful. By mobilizing the nerve segments, by displacement of the nerves in certain instances and by suitable posture, an end to end suture can usually be made, even when considerable portions of the nerve ends have had to be resected. The changes produced in nerves when divided by rapidly travelling missiles should be borne in mind.

The necessity or advisability of performing primary suture has not been fully realized and consequently secondary suture is of rather frequent occurrence. A neuroma has developed in these cases upon the distal end of the proximal segment. In comparatively recent cases this neuroma is not very large and not much fibrous or scar tissue is found within the nerve.

In cases of longer duration, the neuroma will be larger, the scar tissue will have involved a greater length of the nerve and a wider resection will be necessary. The advisability of early operation can thus be seen. It is surprising, however, to see how few changes occur in the distal segment. Recently I operated upon an external popliteal nerve which had been divided twenty years before in a gunshot wound. The distal segment of this nerve was approximately the same size as that normally found.

The success of a secondary nerve suture depends upon wide resection of scar tissue and an accurate end-to-end approximation of the segments, avoiding axial rotation of the segments. In resecting the neuroma, the funiculi of the proximal seg-

ment often present a peculiar, matted, oedematous appearance. This is apparently due to the development of new neuraxes. A suture may be safely attempted at the level at which these peculiar changes are found.

The same principles that have been mentioned in primary nerve suture apply to secondary suture. Especial care should be exercised in exposing the nerve in secondary suture to make the dissection along intermuscular septa so that after completion of the suture, the line of suture can be placed between healthy, non-bleeding tissue.

When neurolysis is performed, as a rule, no attempt should be made to surround the freed nerve with Cargile membrane, fat or fascia, for usually these do not prevent the reformation of adhesions. These should be carefully avoided. I have had the opportunity of examining at a second

operation nerves about which fat had been placed. The fat had disappeared from the transplant and the nerve was surrounded by adhesions—delicate it is true—over the distance where the fat transplant was applied. It is but rarely, that, by careful dissection and displacement of surrounding tissue, a non-bleeding healthy bed cannot be provided for a nerve dissected out of contracting scar tissue or a compressing callus.

I would like to emphasize again the necessity of an early exploratory operation in peripheral nerve lesions. Often too much reliance is placed upon improvement in sensation in determining whether or not an operation should be attempted.

The possibility of an overlap in protopathic sensibility as emphasized by Pollock should be kept in mind in making examinations for changes in sensation. The true index, of return of function after peripheral nerve suture or neurolysis, is the return of motor power in the muscles supplied by injured nerves. This is the only valuable index in determining whether the conducting power of the nerve has been reestablished.

The after-treatment is an important part of the treatment. The paralyzed muscles should not be allowed to be overstretched during the process of repair, neither should they be allowed to undergo disuse atrophy. Rigid splinting should be discouraged, for mild degrees of fibrous anchylosis may develop, especially in the small joints of the hand.

Many of the trophic changes occurring in peripheral nerve injuries are the direct result of trauma. Ulcers may develop upon the fingers in cases of median and ulnar nerve palsies, the result of cigarette burns, and the changes noted in the toes and heels after injuries of nerves of the lower extremities are often the direct result of injuries.

The greatest number of successes follow suture of the musculospiral nerve. After successful suture of this nerve, return of function in the muscles supplied by it may be noted as early as from five and one-half to six months after the operation. Return of function may be noted as early as seven months after suture of the internal popliteal nerve. In cases of division of the sciatic in which the external and internal popliteal divisions are sutured at the same level return of function may be noted in muscles supplied by the internal popliteal long before it is noted in those supplied by the external popliteal. Suture of the median gives good results. The results following suture of the ulnar nerve are noted late and are often incomplete. It has been my experience that the results of suture of the external popliteal nerve are not especially good. Return of motion, when such occurs, often not being noted until as late as two years after the suture. I have observed in one case of external popliteal suture, return of motion after six and one-half months. It is difficult or impossible to state why motion returns so late after external popliteal suture in the majority of cases.

The time element in peripheral nerve suture is important as the number of successful sutures becomes greatly reduced after a certain time. Sutures performed before the end of the ninth month after the injury seem to give the greatest number of successes. After this time there is a marked falling off in the number of successful cases. Careful painstaking surgery is necessary and, patient careful after-care essential.

IN WHAT CASES DO UTERINE FIBROIDS STILL REQUIRE OPERATIVE REMOVAL?

The points emphasized by Fred J. Taussig, St. Louis (*Journal A. M. A.*, July 30, 1921) are: Radiotherapy of fibroid tumors is destined more and more to displace operation as patients learn to come early before contraindications to its use have arisen. In the negress, however, surgery will still have to be generally employed in fibroid tumors on account of their earlier, more rapid and more complicated development. Radiotherapy is a measure that has definite contraindications and the selection of cases suitable for such treatment should remain in the hands of the trained gynecologist.

SELECTION OF OPERATION IN TOXIC GOITER.*

BY S. J. SEEGER, M. D.,

MILWAUKEE.

In toxic forms of goiter the toxemia is quite generally regarded as being due to an excess in the tissues of the iodine containing compound normally secreted by the thyroid. Surgery in toxic goiter has for its object the removal or destruction of a portion of the hyperplastic gland or a removal of adenomatous tissue which is producing this excess of secretion. Among the surgical operations most commonly used are: 1. The injection into the gland of substances designed to destroy a portion of it, probably the best of these measures being the hot water injection of Porter; 2, the ligation of the superior poles of the gland with their blood vessels; and 3, partial thyroidectomy. In toxic adenomas removal of the adenomatous portion of the gland should be the object of operation.

The degree of cure and the subsequent efficiency of the patient is dependent in these cases on the amount of damage which has been done at the time the disease is arrested. In the very mild cases attention to hygiene, the correction of intoxication whether it be intestinal or due to bad tonsils or teeth, the removal of bad psychic influences, will sometimes give relief, and at times a complete, spontaneous cure will follow a course of so-called medical treatment. It is impossible in a given case to predict the course and severity of the toxemia and the physician who permits these patients to acquire a permanently damaged heart and nervous system while carrying out a course of medication is as culpable as the surgeon who rushes into the operative treatment without careful study of the individual case. Surgery is the best means we have today for the arrest of the toxemia and the advisability of operation should be considered early in every case and should not be delayed until degenerative changes make the patient a poor surgical risk. It may seem superfluous to add, with so logical a sequence of cause and remedy, that the presence of hyperthyroidism must be established and the thyroid incriminated as the cause of the symptoms before surgery is advocated and practiced in any particular case, in short, the diagnosis must be carefully made. The newer methods for estimating the basal metabolic rate give promise of being valuable in giving an added means of establishing the diagnosis and especially in aiding us in excluding from the group of toxic goiters the psychoneurotic type of case, with tremor, tachycardia and enlarged thyroid, in whom there is no relation between the enlarged thyroid and the symptoms. This group is mentioned because it presents one of the most difficult problems in the differential diagnosis of the disease, and because operation instead of relieving frequently adds to the suffering of these patients, thus tending to throw surgery into disrepute in its legitimate field. The surgeon can justly claim the disease to be essentially surgical and has to his credit a record of brilliant achievement. While it may be argued, especially in the exophthalmic group, that the removal, by rule of thumb, of hypersecreting tissue from these frequently desperately sick patients is rather a crude procedure, the statement of Frazier that the surgeon need not assume a defensive attitude is supported by striking results.

In classifying the toxic goiters we follow the grouping of Plummer who divides these cases into (1) the toxic exophthalmic group, associated usually with primary hypertrophy and hyperplasia of the gland, and (2) the toxic, non-exophthalmic group, usually associated with adenomas and the differentiation of which, from a pathologic standpoint, from the non-toxic adenomas, is not complete. His description of the course of the average case of exophthalmic goiter is of value as a measuring-rod in determining the stage of the disease in the case to be studied. He states, "If the average course of the intoxication be represented by a curve, the greatest height is reached during the latter half of the first year, then suddenly drops to the twelfth month. In many cases, it reaches the normal base line in the next six months. More often it fluctuates with periods of exacerbation for the next two to four years. Secondary symptoms and exopthalmos may remain, but the active course rarely continues over four years without distinct intermissions." This type is frequently somewhat abrupt in onset and the symptoms appear in typical cases within a year of the appearance of thyroid enlargement. Some of these cases are fulminating in character and die within a few months or become poor surgical risks soon after

*Read before the Surgical Section, State Medical Society of Wisconsin, La Crosse, Sept. 11, 1920.

the onset of symptoms. The toxic adenomas vary from the true exophthalmic cases in that the onset of the toxemia is gradual, symptoms appearing, on an average, fourteen years after the appearance of the goiter. The toxemia in these cases results usually in cardiac degeneration and in symptoms referable to the nervous system, and its presence is often detected in the course of a routine examination in a patient presenting herself for other reasons. Exophthalmos is rarely present in these cases and crises and gastrointestinal symptoms are not such marked features as in the first group. In Plummer's cases the average age of the first group is ten years younger than the second.

With the diagnosis of toxic goiter fully established the surgeon is confronted with the problem of selecting the best operative procedure. This is frequently a difficult task. The operative procedure varies in different types of cases and in the different stages of the same case. There is no field of surgery in which finer judgment is required and in which clinical experience is a greater asset. Certain principles can be laid down which will serve as guides in the selection of the operation, but there are so many factors to be balanced that no set of rules can be given which will cover all cases. One's choice of the operation is made on the basis of one's judgment of the severity of the toxemia, the extent if any of the degeneration of the vital organs, and the stage of the disease.

Subtotal thyroidectomy is the operation of choice. Frequently, however, the patient is seen at a time when thyroidectomy cannot safely be done. Evidence of a severe toxemia, a history suggesting that the patient is approaching a crisis or has recently passed through one, and signs of degeneration of the myocardium should lead one to proceed with caution. The excitement attending the patient's first visit will frequently produce an exacerbation of symptoms and may mislead one when attempting to interpret the degree of toxemia. For this reason, observation over a period of time is essential before making a decision regarding the best procedure. It is well to remember that the surgery of toxic goiter is not emergency surgery and that at certain times operation is to be deferred. Loss of weight and gastrointestinal crises with vomiting and diarrhoea are significant signs. While there is no one accurate and infallible method of determining the amount of psychic and physical trauma these patients will stand without developing a severe storm of symptoms, a careful analysis of the history and symptoms and physical signs will enable one who has observed numbers of these cases to arrive at an accurate estimate of the operative risk. In conjunction with the clinical observations, studies of the basal metabolic rate are of value in determining the degree of hyperthyroidism present at the time. Men skilled in the interpretation of the symptoms of toxic goiter, who have made metabolic studies in large numbers of cases, report that the degree of hyperthyroidism estimated from the clinical features and the degree of hyperthyroidism determined from the basal metabolic rate practically always correspond. The metabolic rate gives no index of the amount of damage which may have been done previously, and it can be used only partially as a means of determining the best operation. Changes in the blood picture, emphasized by Kocher as of great importance in gauging the toxemia, are now not considered of much value in solving this problem.

Ligation of the superior pole, either on one or on both sides, is done either to test the ability of the patient to stand thyroidectomy or to improve her condition so as to make thyroidectomy safe. It has been a valuable addition to goiter surgery. Most surgeons do not practice ligation of the inferior vessels because of the technical difficulties encountered in most cases. Ligation of the superior pole, while it is a minor procedure from a technical standpoint, is one whose employment in severely toxic cases is frought with danger, and its ill advised performance may result in death. When done at the proper time it is attended so frequently by results which are little short of spectacular that it is one of the most useful and satisfactory of surgical procedures. When employed as a preparation for thyroidectomy it is usually done at five or six day intervals and under local anesthesia. Patients are then sent home for a period of two to four months at the end of which time thyroidectomy can be safely done in the majority of cases. These patients frequently gain from twenty to thirty pounds in weight and the improvement of all symptoms is as a rule quite marked. At times, if in doubt as to the ability of the patient to stand thyroidectomy as a primary measure, ligation of one side may be done. If this is followed by a slight or by no reaction, thyroidectomy may safely be done in the course of a week. If

reaction is severe, a second ligation is done and a period of several months is allowed to elapse before thyroidectomy is attempted. The only objection to ligation is the additional scarring. When incisions are properly made, in a natural crease of the neck, usually present, the scar as a rule is a negligible feature and is entirely outweighed by the value of the operation. Severe cases which do not react favorably to medical treatment after a reasonable length of time may be ligated after the preliminary injection of hot water into the gland. This procedure seems to lessen the severity of the reaction following ligation.

Whenever the surgeon doubts the ability of the patient to stand a contemplated operation it is well to do less than was originally intended in an operative way. If thyroidectomy was planned in such case, it is well to do one or two ligations instead, if two ligations were planned, one ligation or hot water injection should be done. Disinclination to return the patient to bed without doing anything in an operative way will lead to regret when severe cases react unfavorably on entering the operating room, and before anything is done.

Patients who have had exophthalmic goiter for years but who have passed the stage in which there is any toxemia from the thyroid are not surgical cases. These patients, while suffering from the permanent effects of a severe hyperthyroidism, namely exophthalmos, cardiac damage, and nervous symptoms, frequently show, in addition, signs of myxedema. Removal of a portion of the thyroid in these cases is of course contraindicated.

In the toxic adenomas, which must be differentiated from true exophthalmic goiter, thyroidectomy is as a rule the primary operation. When seen early in the course of the frequently slow toxemia, these cases are not severe risks, but when seen later, when cardiac degeneration has taken place, they are among the most dangerous cases for operation. Local anaesthesia is frequently employed by us for operation in this type of case with gratifying results. For some reason these cases do not improve in nearly as large a per cent following ligation as do cases of true exophthalmic goiter. The reason for this is not clear. At times improvement does follow and it is advisable to practice preliminary ligation in selected cases.

DISCUSSION.

Dr. Edward Evans, La Crosse: Mr. Chairman and Gentlemen: I am sure, after the splendid collaboration of papers this morning on the subject, it is not necessary for me to say much about them. I do want to congratulate the surgical section on the character of the papers and the discussions not only on goitre but on gall-bladder this morning. It seems to me that in our medical society of Wisconsin we are getting around to the broader consideration of surgical procedure, that is, the discussion of what we may call physiological surgery. We have had a splendid example of it today in this symposium. In other words, that we are trying to become surgeons and not mere operators. We are studying the functions of organs and the best means of correcting malfunction without producing harm.

In discussing Dr. Blankinship's paper I think there is little to be said except that we are apt to override a hobby.

I think in studying the etiology of goitre it is well for us to think of it along the same lines as we have now learned to think of diabetes: that diabetes is not a disease but a basic deficiency of the pancreas, and so in studying goitre, aside from the toxic agent, I think it is well for us think of the possibility always of the basic deficiency or disfunction in the gland. At the present time a patient that I am afraid is dying at the hospital illustrates this very well. Eight years ago she had a kidney removed for suppuration with stone and she has had some infection since, and the last two infections she has had have been accompanied by a very marked evidence of deficiency of the suprarenal gland, she has gone along very smoothly but the infection gives unbalance. I think it is well for us to think thus about the thyroid too.

I was impressed with Dr. Smith's paper—his plan of ligating the vessels. It seems to be the logical and successful mode of procedure, inasmuch as we have the vessels under the eye all the time.

I think something is to be said in criticism of the suggestion of Dr. Seeger in injecting boiling water. It seems like a very simple thing to do and yet a collection of statistics have seemed to demonstrate (although statistics are often of very little value), that the injection of hot water is a more dangerous procedure than the ordinary surgical removal of the thyroid gland.

The question of local anesthesia was well discussed. After all, it is a question of reaction, on the part of the patient; the skill of the operator and his judgment in selecting his cases, perhaps more than anything else. A case that seems a safe surgical risk is as safe and easier under a well administered ether anesthesia. Or perhaps instead of ether, gas oxygen may be used. The points I would like to make are first, in the etiology, to think that we may have deficiency or disorder of function in the thyroid gland, we at least have a great deal to learn yet about the corrolation one to another of the ductless glands. Second, the choice of operation depends very largely on the operator and his skill and judgment in selecting his cases properly. The point I think was well made this morning that so-called goitre operations are often more properly thyroid operations for many, a great many thyroids are operated on

unnecessarily. The choice of operation depends very largely on the operator, and the point that was made this morning that I want to emphasize is that it is not an emergency operation, that you may often have to tide the patient over an emergency before you do the operation, or else you will meet catastrophe. Your choice of anaesthetic as I say was well discussed this morning and needs to be very carefully considered. Personally, I feel that I would sooner use general anaesthesia or the combined anaesthesia than local in most cases. Of course, in the case that is a simple case, anybody can cut out the goitre safely under either local or general. The difficulty is in the border line cases where we hardly know what we should do, and if we do operate, what is the best anaesthetic to use? In removing the goitre, especially the toxic goitre, it is not enough to remove one lobe, even when you find enlargement is often very largely to one side, the operation is very apt to be a failure unless you remove enough of *both* lobes. That has been brought out very clearly by an English writer lately. With the same amount of gland removed from two sides you are going to have success and fail with as much removed but only from one side.

Kamm insists that digitalis will not help his cases with degenerated, fibrillating hearts in hyperthyroidism. Digitalis fails to do any good probably because the poisoning has gone on so far that digitalis or anything else will not help, and that case, if it be operated on, will be very apt to die.

In conclusion I would like to say that I don't believe that we have finally arrived at the etiology of goitre and we still have to hold in abeyance our judgment as to what will be the ultimate treatment of goitre. At the present time surgery is the best treatment. When we arrive at better understanding of what goitre is, it may be that surgery will be unnecessary.

Dr. Robert Emmett Farr, Minneapolis: I am thankful for the privilege of discussing this important subject. When such a master as Crile, with the statistics which he can show, will admit that he can not give one any data which may be followed in relation when to operate or how much to do, it is not to be wondered at that it is difficult for those of us who have, speaking comparatively, little experience to know what to do. In my own cases I have guessed wrong several times and, as I gain more experience, I am having a larger number of cases and consequently a larger number of bad results as my material is not so good. I lost a woman this summer from a simple ligation of one pole under local anesthesia. I guessed wrong in this case. The anesthesia problem is only one of the problems which we must meet in the treatment of goitre. I can not agree with Doctor Evans that general anesthesia is preferable to local anesthesia in most cases. Generally, in a simple goitre, local anesthesia has the same relation to surgical work as it does in a hernia, vasectomy, bunions or any other comparatively simple condition. In those cases the outcome depends upon the ability of the surgeon to give a patient a perfectly painless operation.

I would also have to disagree with Dr. Derge with regard to the question of pain. Every time that a patient has pain in any of these operations it means that a sensory nerve has been missed; it means that the surgeon has slipped somewhere—and we should aim to make the technic such that pain does not supervene, and the patient should be the judge.

With regard to the technic of local anesthesia in this work, I believe that complicated methods should be done away with and that simple methods should be employed. We make a complete subdermal infiltration through an initial wheal, all secondary wheals being made from underneath. Needle pricks are always painful unless made in this way and in exophthalmic cases they are especially so. Long needles are used and about two ounces of novocain is the amount of fluid used for the subdermal injection. The cervical nerves are then blocked on either side, the needle being carried down until it strikes the bodies or transverse process of the cervical vertebrae. One is well behind the vessels and by keeping the needle moving and covering a vertical line about two inches in length the nerves may be soaked with fluid at their exit. The operation may then be begun at once. We have devised a goitre clamp which comprises two parallel rings. This clamp effectually holds the gland after it has been mobilized. This clamp has three distinct advantages. First: It allows one to control the gland, thus eliminating the necessity of repeatedly picking the gland up and massaging it and forcing its contents into the patient's circulation. Second: It prevents hemorrhage from the gland and greatly reduces the number of hemostats necessary. Third: Its use makes it possible to hold the trachea in a straight line and prevent embarrassment of respiration.

While we have used local anesthesia in all of our exophthalmic goitre cases we are not convinced that it is the best method. The psychic is the greatest element with which we have to deal, perhaps, and we may eventually decide that this should be controlled by the use of general anesthesia. However, I feel at this time that the bad risks can be more safely carried through under local anesthesia. I thank you.

Dr. S. J. Seeger, Milwaukee: I do not wish to be misunderstood as stating that hot water injection is without danger. In severely toxic cases no operative procedure is without danger, and hot water injection probably is the least dangerous operation available when something must be done. The high mortality in the series of cases mentioned may be due to the fact that this operation was used only in the most toxic cases.

THE RELATIONSHIP BETWEEN THE PATHOLOGY AND SYMPTOMATOLOGY OF GOITER.*

BY ERNEST V. SMITH, M. D., F. A. C. S.,

FOND DU LAC.

The relationship between the pathology and the symptomatology of Goiter has been a subject of discussion by Clinical Pathologists during the past fifteen years. A few of the best pathologists in this country claim that there is very little relation, while there are others who assert, there is a very close relationship.

There exists an indefinite idea of the pathological classification of Goiters in the mind of the average student of Medicine, and for the purpose of simplification I wish to present two charts showing a "Pathological Classification" and a "Clinical Classification". The third and fourth subdivision of the Pathological Classification will be considered in this paper, because these Goiters produce toxic symptoms.

(Crotti, in his masterpiece on the Thyroid and Thymus Glands gives the following description of the Hyperplastic Thyroid.) "The cut surface of the gross specimen of a hyperplastic or exophthalmic goiter is of a reddish gray color and exudes very little secretion. It has the appearance of a cross cut of muscle tissue. The most interesting features are found in the microscopic sections.

"The aveoli instead of being round or oval as in the normal gland becomes very irregular. This irregularity is produced by the increased number of epithelial cells. In the normal Thyroid the epithelial cells are of the cuboidal type, but in the hyperplastic Thyroid they are of the cylindrical or columnar type. At times the hyperthrophy and hyperplasia becomes so marked that the epithelium can no longer line the walls of the alveolus in one continuous layer but is forced up into papillary formations within the alveolus. Even this may not be sufficient and the cellular elements may pile upon each other and form two or more layers. The cells are clearer than normal and the nuclei are basal. Mitosis is frequent, and is considered a sign of cellular activity. In the normal Thyroid the colloid substance is thick and takes the stain deeply; in the hyperplastic Thyroid the colloid is thin and takes the stain very poorly,—if at all."

The important question arises: Are the microscopic changes found in the hyperplastic Thyroid, constant, and always indicative of hyperthyroidism?

Marine says, "The Thyroid gland is such a lobular tissue that it undergoes marked anatomical alterations in a great variety of clinical conditions and he believes that these alterations merely represent a simple series, rather than entities for many clinical states."

Wilson claims that, "From a study of a large series of cases he was able to estimate the clinical severity of the diseases with about seventy-five per cent of accuracy. He further states as his opinion that the relationship of primary hypertrophy and hyperplasia of the Thyroid to true Exophthalmic Goiter is as constant as is a primary Inflammation of the Kidney to the symptoms of Bright's Disease."

During the past year we have made a careful and exhaustive study of all the Goiters which we removed between February, 1917, and June 1, 1920. There were two hundred and twenty specimens and each was divided into ten blocks and sections made and a microscopic study of each section recorded. The ultimate classification of the gland depended on the composite picture of the ten blocks studied. From the gross and microscopic pathology the two hundred and twenty Goiters were classed as follows:

154 or 70% were adenomatous,
59 or 27% were hyperplastic Thyroids,
7 or 3% were colloid.

Follow-up letters were sent to all patients, operated prior to January, 1920. These letters were sent with the prime object that we might determine the degree of improvement. All the cases in this series are of too recent date to be able to determine a percentage of cures, especially in the hyperplastic group. The degree of improvement (on a scale of four), was based on the report made by the patient and was estimated by a physician not directly interested in the findings. The greatest number of fourth degree improvements were found in the cases of adenomata, but in considering the percentage of improvement from the operation the hyperplastic Goiters led the series. Of the adenomatous Goiters,

*Read before the Surgical Section, State Medical Society of Wisconsin, La Crosse, Sept. 11, 1920.

63% reported a complete or 4th degree improvement,
13% reported a 3rd degree improvement,
14% reported a 2nd degree improvement,
6% reported a 1st degree improvement,

leaving 4% of absolute failure. Of the hyperplastic Goiters from whom reports were obtained,

64% reported complete or 4th degree improvement,
24% reported a 3rd degree improvement, and
12% reported a 2nd degree improvement.

From our entire series of Thyroidectomies, we have had three deaths. Two of these occurred on the day of the operation and one on the fourth day after the operation. All these cases were classed as fourth degree risks previous to the operation.

From a microscopic study of the pathological specimens without knowing the clinical picture in a given case, we were able to judge with a high degree of accuracy the severity of the disease when due to a hyperplastic Goiter. We were unable to tell anything about the degree of toxicity in the case of the adenomatous Goiters from the microscopic and gross pathology.

After reviewing our clinical and surgical data, we are convinced that the adenomatous Goiters are more frequently toxic, than is commonly recognized by the physician. One of the best indicators of hypermetabolism in thyrotoxic Goiters is loss in weight. Consequently, a gain in weight following a Thyroidectomy should be indicative of lessened toxic absorbtion. The average gain in weight following Thyroidectomies in the adenomatous Thyroids was more than thirteen pounds. The average gain in the hyperplastic was more than nineteen pounds.

A patient with an adenomatous Thyroid will frequently state that her Goiter, "does not bother her in any way," and—"if it were not for the looks of it she would not have it removed." But you can very frequently get a history of sleeplessness and find upon questioning her that there is a tendency for her to worry a great deal over things of little importance. In such a case following a Thyroidectomy, with a gain in weight of from twelve to fifteen pounds and a changed mental attitude one must admit that previous to the operation that patient suffered from a thyrotoxic absorbtion.

The term exophthalmic Goiter is descriptive of only a small percentage of that group which should be spoken of as the hyperplastic Thyroid. Exophthalmus was present in about thirty-five per cent of the hyperplastic Goiters of our series.

We have been unable to determine any definite pathologic picture for the toxic Adenoma which will distinguish it from the non-toxic Adenoma.

Plummer has pointed out that the toxic symptoms of Adenoma may come on very suddenly in a case which has apparently been non-toxic for many years. This is different in the case of the hyperplastic Thyroid where the height of the symptom complex may be reached within a few months of the onset of the Goiter. In fact one frequently encounters a very clear syndrome of symptoms without the presence of an enlarged Thyroid.

The Recent Studies in Basal Metabolism by Snell, Ford, and Rowntree, are very interesting and prove in a scientific manner, that the metabolic rate furnishes an accurate index to the clinical condition and to the result of the Medical and Surgical treatment of Goiter.

Regarding the etiology of the adenomatous Goiter I wish to express the opinion that they are in a great majority of cases caused by an infection of the gland, which occurs early in life and that the adenomatous condition which we see is only the late expression of such encapsulated infections. Regarding the hyperplastic Thyroid I desire to reiterate a statement published in 1914, "That the symptom complex, known as hyperthyroidism, is due to a faulty metabolism by the Thyroid gland and not to a hypersecretion of its normal product.

In the surgical treatment of the hyperplastic Thyroid I recommend for your consideration, a technic of multiple ligations which we have practiced with great satisfaction in a number of selected cases. It has a wider range of usefulness than the single ligations as commonly done.

We make under the local anaesthesia a low collar incision, turning the upper flap just as if we were going to do a Thyroidectomy. The fascia is divided in the midline and the entire gland exposed, as in a Thyroidectomy. The four poles are then ligated with silk under direct view. The fascia and skin are closed the same as in Thyroidectomies. Multiple ligations through the low collar incision have several distinct advantages over the common type of ligations. It is not as painful to the patient, because you have an ample incision and you are not working down in a hole.

It enables one to do the ligations under the direct vision and consequently you can be sure of doing a good job. As the Thyroidectomy incision is made in the same place, you ultimately have one scar instead of three. We have not found that in case of a later Thyroidectomy that the scar tissue interferes to a great extent, with the second operation. All four poles can be ligated almost as rapidly through the low collar incision as one pole through the high incision. The relief from symptoms does not occur as rapidly following the four pole ligations as it does following a Thyroidectomy, but the degree of relief is surely two times that obtained by the ligations of the upper poles.

I also wish to recommend to you a refinement in our surgical technic in the Goiter work which we have been practicing for more than three years, and that is the so-called Sterile Anaesthetic. The anaesthetist scrubs up and dons cap, gown, and gloves just the same as if he were going to take an active part in the operation. All gauze, masks, and ether cans used by him are sterilized. With such technic it is not necessary to have a protecting screen, between the Surgeon and the Anaesthetist, and it gives both the Surgeon and the Assistants more room; the exposure can be better and the second assistant is in a position to be of some real help during the operation.

Finally, I would not feel that I had done my duty, unless I emphasize again, the value of team work in doing Thyroid Surgery. A difficult hyperplastic Goiter is always more than a one man job, and team work is surely more essential in a game of life and death, than it is in a game of sport or finance.

USE OF EXPERIMENTAL PSYCHOLOGY IN PRACTICE OF MEDICINE.

Edmund Jacobson, Chicago (*Journal A. M. A.*, July 30, 1921) expresses the belief that with the future development of experimental psychology applied to medicine, a new period of treatment may gradually arise, not merely for functional but also for organic conditions: a period in which the internist will not be content with considering the nervous and mental aspects of disease utterly out of his domain; a period in which it will not be considered sufficient to doctor the body alone, or in other instances, the mind alone; but rather the assumption as a rule that, with every patient and in practically every malady, there is both a physical and mental side that may demand delicate attention. From this point of view therapeutics in general should have a combined physical and mental approach.

A RESUME OF THE OCULAR MANIFESTATIONS IN PREGNANCY.*

BY NELSON M. BLACK, M. D.,

MILWAUKEE.

It is not surprising that during pregnancy disturbances of Metabolism should be manifested and the activity of the organs of the body be seriously interefered with. The foetus lives as a parasite at the expense of the mother and draws from her the entire material required, not only for the formation of its own body, but also for its own metabolism. There is thus caused in the first instance a more or less complete exhaustion of the reserve substances stored up in the maternal body, and secondly an increased demand for nourishment and oxygen. The necessary consequence of the satisfaction of these demands is an increased activity on the part of all the organs of the body. In addition to these are the mechanical and pressure disturbances.

The increased consumption of the reserve material of the pregnant woman is bound under all circumstances to diminish the resistance of the body against all injurious influences.

Thus in any organ of the body in which there exists some abnormality, or in which there is present at the time of pregnancy some morbid process, the chances for pathologic changes to take place or to increase are greatly enhanced by the general lowered bodily resistance. Further, the general lowered resistance cannot successfully combat the effects of foci of infection that may be active in the body, which may act as the exciting factor in lighting up morbid processes in any organ, the eye not excepted.

The early recognition of the ocular disorders during pregnancy is of great importance, as they frequently are warnings of marked systemic disturbances which not only menace the eye sight of the woman but possibly her life.

Increased deposit of pigment in the rete mucosum of the lids, as well as other parts of the body, is frequently noticed. These *Chloasmata Uternia* consequent on the destruction of a large number of red blood corpuscles, usually disappear after delivery, depending on the depth and extent of the

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pigmentation. In patients with marked Chloasmata, examination of the blood is indicated as well as to determine if activity of the kidneys is diminished.

Occasionally the secretion of tears is increased from the third month on to term, and is quite annoying. This is quite frequently accompanied by increased secretion from the salivary glands. Usually in these cases the lachrymal and salivary glands are swollen.

The phlyctenular inflammations of cornea and conjunctiva which occur during pregnancy are not peculiar to the condition and will not be dwelt upon.

Subconjunctival hemorrhages, if frequent and large in amount, indicate some cardio-vascular change and should be regarded as danger signals. They may be early signs of a grave toxemia.

Ulcers of the cornea are not frequent in pregnancy, but develop from the usual causes; i. e., injury and infection.

Softening of the cornea, Keratomalacia, occasionally develops in subjects very much enfeebled by pernicious vomiting and with dyscrasias.

Conical Cornea is said to have developed in pregnancy, and to have its origin during the stress at delivery.

Any previous existing weakness of the intrinsic and extrinsic ocular muscles may be aggravated, especially if the general physical condition has become below par.

Cycloplegia may appear during the latter half of pregnancy, the result of insufficient inervation of accommodation, and is most annoying.

Polyopia may develop in the early months, and is usually one of the manifestations of an hysterical condition.

External and internal squint is occasionally present, especially in those with unstable muscle balance, and is most difficult to relieve owing to the irregularity of the manifestations of the Strabismus.

As a result of reflex disturbance through the sympathetic nervous system, Myosis or Mydriasis may be in evidence.

Intercurrent iritis or cyclitis are usually dependant on pre-existing causes, such as focal infections, or toxemias generated by the pregnant state.

The formation of cataract has always been considered as due to pre-existing disease.

Vitreous hemorrhages occur rather frequently causing great alarm. As a rule, however, there is complete absorption with no loss of vision.

The visual disturbances liable to complicate pregnancy are classified by Woods as: (1) The sudden Amaurosis usually called Uremic; (2) The retinal changes spoken of as Albuminuric retinitis of pregnancy; (3) loss of vision in some parts of the visual field without retinal lesion, sometime with pallor of the disc and (4) neuroretinitis not resembling that called albuminuric.

"It is now accepted that the Eclampsia of pregnancy is not uremic in origin but is allied to pernicious vomiting which is caused by the circulation of toxic substances in the blood." So the amaurosis of eclampsia is believed to be due to a sudden toxic saturation of the optic nerve and retina. Retinal changes being absent because of insufficient time for them to develop. This view is supported by the fact that Optic Atrophy sometimes follows uremic amaurosis.

The term albuminuric retinitis of pregnancy has been superseded by the term retinitis of pregnancy. "So far as they occur together, retinitis of pregnancy and albuminuria may be disassociated, for it is a patent fact that either may and frequently does exist without the other. Therefore an albumin-free urine need not rule out a diagnosis of toxic retinitis in a pregnant woman."

Retinitis of pregnancy is a rare occurrence being found, according to Silex, but once in 3,000 to 4,000 pregnancies; while albuminuria during gestation is not uncommon, varying from 2 to 20% (and retinitis is found in albuminuria once in 45 cases).

The retinal disturbance is not considered to be a form of albuminuric retinitis, although the true albuminuric retinitis may develop during pregnancy from a pre-existing chronic nephritis.

Neither is the nephritis of pregnancy a true inflammation. Both the retinitis and nephritis are undoubtedly dependent upon the same cause, a toxemia. What the nature of this poison is has not been fully settled but progress has been made. At least a name has been attached to the toxins, viz., *syncitiotoxins,* by which is meant the products of the disintegration of the syncitium cells. These are described as the outer of two layers of cells of

fetal origin, which form part of the developing placenta and lie next to the maternal mucosa. They are so named from their immediately connecting the fetal and maternal structures. Their origin and function is physiological, and when their purpose is served their death is likewise. One might say the formation of toxins in one's body is a physiological process. It is not the formation but the failure of proper elimination of toxins which acts deleteriously on the economy.

The ophthalmoscopic signs of the retinitis may not differ from those associated with other forms of nephritis. In general terms there is a widespread neuro-retinitis with exudation and hemorrhage, the retinitis being toxic rather than vascular in origin; although gross endarteritis with obliteration in the choroidal vessels and in the posterior ciliary as well as the retinal vessels has been found. The findings in the majority of cases have been such as to reasonably allow us to suppose that the vascular changes which take place in pregnancy and in the nephritis are of a temporary nature. Perhaps half of the eclamptic cases complain of disturbances of vision, but decidedly few will show evidences of retinitis, and among these the star figures are rarely found.

In the retinitis of pregnancy, the prognosis in so far as it concerns the vision and life of the patient, depends upon the duration of the gestation. If the visual disturbances appear during the first six months, usually the pregnancy should be terminated if the sight is to be saved. It must be borne in mind that any serious eye lesions may be made worse by a subsequent pregnancy. Nephritis and retinitis caused by a former pregnancy, may get entirely well or at least be greatly improved. The induction of labor, therefore, has been recommended as a therapeutic measure, because, with the termination of pregnancy, the inflammatory deposits may subside and good vision be restored, provided the process has not continued long enough to allow secondary changes to have taken place.

In general, it may be said that retinal hemorrhages usually indicate a grave toxemia. If the hemorrhages are over the macula, and if the optic nerve is involved, and the symptoms are not heeded, during which time the toxemia becomes increased, a permanent impairment of vision is inevitable. The life, future health and vision of the woman are, therefore, best safeguarded by an interruption of the pregnancy. Usually the vision improves rapidly after delivery, the exudation becomes absorbed and the hemorrhages subside, although in extensive effusions a certain amount of permanent impairment is not uncommon.

The prognosis as regards sight in these cases is probably not so good as is commonly thought, though as regards life it is much better than in the nephritis of the non-pregnant. Sight, however, never improves until the pregnancy is terminated. Without the induction of labor the prognosis is most serious. Cases which go on to term show the largest proportion (15%), of deaths and the greatest damage to sight. Spontaneous premature delivery shows 11% of deaths, while after the artificial delivery the mortality is but 4%.

Silex found a return to normal vision in all but three cases out of thirty-five. Moderate vision, only, therefore, can be anticipated if abortion is induced at the 7th or 8th month of pregnancy. Accordingly, in the last two months, ocular symptoms are to be weighed with other findings. Usually, partial optic atrophy is present with white or pigmented spots at the macula. Fortunately, recovery follows in the majority of the cases in which visual disturbances have not come on until the last two or three weeks.

A true optic neuritis, that is, papilledema, is not infrequently found associated with the toxemia of pregnancy. In such instances the relations of the optic nerves to the pituitary body must not be overlooked, and because that structure is so frequently affected in the course of pregnancy, it should be borne in mind that pressure on the nerve may arrive from swelling of the hypopysis.

Detachment of the retina is one of the unusual ocular complications of pregnancy and of the puerperium, arising from the strain of prolonged and difficult labor; it occurs more frequently in the course of retinitis of the pregnant than in the retinitis of the non-pregnant. In certain of the cases reported, myopia had already existed, which condition should always be considered as well as the effects of the stress of the puerperium, which stress in the susceptible can be sufficient to cause detachment. Bilateral detachment of the retina has occurred, but, in some fortunate cases, the membranes become reattached, although optic atrophy supervened. From the cases reported,

the chances of recovery of perfect vision after detachment of the retina during pregnancy, labor, or in the puerperium, seem to be better than in the non-puerperal state. The induction of abortion therefore, may favor the re-attachment.

It is well known that distinct modification of the cardio-vascular system occurs during pregnancy, and that the constitution of the blood is changed, comprising an initial reduction followed by increase in amount of fibrous elements; and it is marked by variations in the blood pressure during the last three months.

Numerous cases of what have been considered to be embolism of the central artery have been reported, for which affection no other cause than the general blood changes could be assigned. A branch only, as the superior temporal, may become affected, so that only the portions above the macula become ischemic with the consequent defects in the lower portions of the field and a reduction of the general visual acuity. The value of the cilioretinal vessels is here fully shown. Occasionally, the vision may be greatly regained, owing to the restoration of the lumen.

Inasmuch as foci of infection in the para nasal sinuses, teeth, and tonsils, have been proven to be such active factors in the etiology of ocular disorders in apparently healthy individuals, it is only reasonable to suppose they would be increasingly dangerous as etiologic factors in the condition of lowered bodily resistance induced by pregnancy.

In three cases of retinitis of pregnancy that have come under the writer's observation, with marked reduction of vision, there was found in each case extremely active infectious processes in the teeth and tonsils. Unfortunately the damage to the eyes had already occurred but improvement in the ocular condition, which in one case was marked and in the other two slight, did not take place until treatment was directed to the infected teeth and tonsils.

Would it not be wise therefore in pregnant women, in addition to the early and frequent examinations for albuminuria which is practically always done, to search early for possible foci of infection especially in the teeth, para nasal sinuses and tonsils, and correct morbid processes when found, rather than run the risk of allowing the patient to proceed to term with possibility of having to terminate pregnancy in order to save life or prevent loss of, or diminished vision?

REFRACTION OF SCHOOL CHILDREN.*

BY JOSEPH BELLIN, M. D.,

GREEN BAY.

It was recognized as early as the beginning of the 19th century that the requirements of school life resulted in injury to the eyes of many of the children.

It is recognized by present observation that myopia, hypermetropia and astigmatism is prevalent in 20% of all school children, and the alarming part of it is that these disorders are progressive as the child grows up. It is therefore quite evident that some cause is prevalent connected with school life that is responsible for this disturbance, and the following reasons were advanced with suggestions for the remedy of the cause and effect.

Hygiene of the School Room.—So much has been done in the way of improvement towards the adjustment of desks, text book types, paper and print used in books, etc., that one would almost think that very little else remained in way of improvement. However, there is still much room for reform in our educational methods viewed from the standpoint of the hygiene of vision.

A modified curriculum which would allow the attendance of partially disabled children, not only for children with defective eyes, but for a very large number who are in feeble health. A good many cities have allowed open air schools which is of vital importance in tubercular work. This same method might be applied to children with defective vision, where a child could devote certain periods of work with the eye and only for a limited time during the day.

Less work required at home.—A good deal of harm comes from this habit, due to poor lighting by artificial light: So much home work is required of the child that it makes it almost compulsory for the child to devote a good share of the evening, thereby requiring constant use of the eye and very often under very harmful surroundings, and poor light causing considerable strain on the eye. If necessary, lengthen the session and spare the eye sight.

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*Read before the Eye, Ear, Nose and Throat Section, State Medical Society of Wisconsin, La Crosse, Sept. 9, 1920.

Evils of the reading habit.—The reading of novels and interesting books and periodicals for the amusement of the young affords constant temptation to the use of the eyes which is often encouraged by parents, and often at hours when their children should be sleeping. There can be no reasonable doubt that this reading habit is an important factor in producing injury to the eyes which would without it pass safely through the strain imposed by the schools. Much might be said right here with reference to the constant continued application of close work.

All investigations point to the need for frequent intervals of rest. What is true of the brain is also eminently true of the eyes. Since the eye strain is greater at near work, it should be arranged that blackboard work, or any kind of work that detracts from close work should be indulged into at frequent intervals during the school session.

Term Examinations.—We all know the amount of cramming that usually precedes a term examination, and the nervous strain involved, both mentally and physically. The eyes without a doubt suffer the largest amount of damage, by being imposed upon early and late in making preparation for these examinations. Why not discourage this practice? Surely we all know that this cramming reaps only temporary results, so why not spare the eyes the unnecessary strain. The architecture of school buildings plays a very important factor in the conservation of the child's vision.

The location with reference to hygiene, the lighting, is of primary importance, since, without adequate light properly admitted to the room, the eyes cannot be placed under favorable conditions for the performance of their important functions. Not only the quality of light, but quantity plays a most important part, likewise the direction of the light.

We all know what a source of aggravation it is to be handicapped with poor eye sight. To such children school work is a pain and a burden. They are always behind in their classes, sometimes remaining in one room year after year, an exasperation to the teachers and discouragement to themselves. Unless relieved and rendered fit for study they are regarded mentally deficient, and morally vicious, become personally disheartened and truant, drift into bad society and associations, commit small and then greater crimes, and eventually may enter the criminal classes, and then become an expense and care to the commonwealth as police court defendants, and as dwellers in asylums, institutions, and prisons.

Education is the greatest enemy of crime, and where education is not possible crime is almost sure to rule. "The Reds," the bolshevik of today are good examples. The war cry against crime should be Education, and where education is difficult or impossible, owing to physical defects or disease, immediate steps should be taken to relieve or remove such defects so that children may be able to receive and profit by education, and thus rear good valuable and respectable citizens, and save millions of money that can be deflected into desirable channels.

I am happy to state that the State of Wisconsin is rapidly coming to the front and doing wonderful work towards the help and conservation of vision in their schools. Within the past decade numerous cities and counties have appointed paid nurses, whose sole duty is to supervise and examine every school child for defect of eye, ear, nose and throat. The nurse keeps a record of every case examined, and follows up each case to see that her orders for correction of the defects are complied with, and in most instances the trouble is soon remedied when called to the attention of the parents. As a rule the parents are only too anxious to remedy any defect in their children when it is within their means to do so.

In some instances, however, we find that a good many cases are neglected due to lack of funds. These conditions are rapidly being remedied by free clinics being established in various cities.

It must not be supposed that eye tests among school children are merely for the purpose of correcting ocular defects by glasses. Such instances are of course extremely frequent, but there are many other ocular conditions which the school test will disclose, such as various forms of sore and red eyes, iritis, ulcers, cataracts, crosseyes and tear duct diseases. Thousands of children already owe their emancipation from such diseases to the ocular examination made in school.

During a recent interview with a school nurse she gave me the following startling figures which was the result of her daily routine in a city of 30,000 inhabitants. Out of every thirty children examined, about fifteen or half had some defections, of the eyes, ears, nose and throat, or had bad teeth. About six of this number had poor

vision and were in need of refraction. The pupils examined were in the grades ranging from the second to the eighth grades, and about six thousand children were examined during the school year, which would make a total of approximately twelve hundred children with defective vision out of the six thousand.

A certain percentage of these eye defects no doubt are congenital, or develope in the early years of childhood, and foremost among these is squint.

We all know that early refraction in these cases is often the means of saving the vision in one eye. It is therefore of the greatest importance in these cases that they be brought to the attention of an oculist as soon as the deformity is detected, and in this case we no doubt must rely on the general practitioner, the family doctor in other words, he, having the interest of the family at heart should refer these cases without fail to an oculist at the earliest opportunity possible. If, at the beginning of the school life these congenital anomalies of refraction could be carefully corrected by suitable glasses, we should hear much less complaint of the harmful influences of the schools upon the eyesight of our children.

In summing up the subject of Refraction in School Children, I find that it sums up under two great heads for results,—Education and Co-operation. I have gone over the Education end of the subject, but in order to obtain better results we need the co-operation of every oculist, of every physician, as well as every parent.

Our school nurses can discover the defects, they can recommend, and suggest, and urge that these defects be remedied but they can not enforce. As a rule, our school boards do not, or can not, back the nurse, therefore, I know of no better backer than the medical profession at large. A word of advice from a family physician usually demands action and attention. So why not put your shoulder to the wheel and help this good cause along, which means so much to the welfare of the future generation.

Dr. L. A. Allen, Oshkosh: Mr. Chairman, Dr. Bellin in his paper spoke about lighting. I would like to discuss the lighting of this room, and want to "beat" Dr. Black to it, because I may be wrong, and would like to have his opinion.

In the first place, we know that later in the year we are going to have to use artificial light a great deal. This light is unscreened in any way, shape or manner. Indirect lighting, or possibly a yellow light, with blue. The light so far as the scholars are concerned, is right, because it is over from that side. It is also good from the teacher's standpoint, because she does not have to face the light. Where the lighting is deficient is that the blackboard, though of a dull surface, is not sufficiently illuminated. Furthermore, in looking beyond the blackboard, I think the window nearest the blackboard is more of an interference to the vision, that is, for seeing anything on the blackboard—than it would be if the blackboard were along on the further window casing. It would be a great deal less of a side light. You know you get the side lights in a camera too, and your photograph is often light struck, on account of these lights. I think this matter of proper lighting is of very great importance, and we are usually considering our scholar and not our teacher. The teacher has to face the bright light all day. This is a better room than the average, but I think it could be improved by changing the position of one window there, and moving it nearer the blackboard, or else bringing it back this way.

Dr. Nelson M. Black, Milwaukee: Mr. Chairman and Gentlemen: Dr. Bellin, in speaking of the correction of errors of refraction in school children did not mention, as I remember, the determination of muscle unbalance. Frequently the youngsters complain of headaches and inability to study with comfort, and we find error of refraction. But these youngsters have bad teeth, or bad tonsils, adenoids, generally badly infected tonsils, and are below par physically, and if the muscle balance is tested frequently we find a very decided insufficiency of convergence. If any of you have ever suffered from that, you know the discomfort the child has in attempting any prolonged study or close work. This is an additional factor I think we should look for in our examinations.

Relative to the question of school lighting—a short time ago I received an invitation from the State Industrial Commission to act on a committee for the purpose of composing a code for school lighting. The work to my mind is rather superfluous, unless taken from this standpoint, that the Industrial Commission wants to go on record as working along that line, for the reason, The Illuminating Engineering Society of the United States has through its very efficient chairman, Mr. Lukish, completed an excellent code on school lighting, factory lighting, street lighting and lighting as relates to every walk of life.

The remarks Dr. Allen made relative to the lighting of this school room I fully concur in. If the fundamental rules of the code of lighting of the Engineering Society were carried out, the discomfort of everyone in this room would be very materially lessened.

Dr. Frederick A. Davis, Madison: Mr. Chairman, I do not know that I can add anything. I might say that in Madison we have established a small free clinic for the care of these school children. The clinic has been in operation about three years. I do not know how common these clinics are in the various cities in Wis-

consin. I presume they are the rule in Milwaukee. But it is a new thing for us. The clinic has been operated, as I say, for the third year. It is handled through the cooperation of the school nurse. The various eye and ear men of the city rotate in the service. It is largely a tonsil and adenoid clinic, with refraction. We have endeavored to take care of the needy poor of Madison. The work has grown so in the past year that I am afraid we will have to curtail it in some way, or add more consultants to our staff. Apparently the public is very eager to avail themselves of the eye and ear and throat clinics, once they know that they are established. I think that we have accomplished a great deal. It seems to me that it is our duty to look after this class of patient. I believe the profession generally out in our small cities, are opposed to the free clinics idea, but I cannot see that it interfers to any marked degree with our private practices from the type of cases we handle.

Dr. Nelson M. Black, Milwaukee: May I ask, Dr. Davis, if the work is associated with that of the Social Workers, so as to determine whether the people that come to the free clinic are worthy of that charity?

Dr. Frederick A. Davis, Madison: Yes, the work and the management of it is under the direct supervision of what was formerly the Associated Charities. They have now designated this Society the Public Welfare Association, and they have a fairly complete follow-up system. Each case is supposed to be thoroughly investigated, as to the earning capacity of the father or mother, the number of children in the family, and this report accompanies the record which is sent to us, so that we are fairly reasonably protected in our own private work. We furnish glasses at a minimum charge or wholesale cost. We have a secretary who orders glasses directly from one of the wholesale houses in Chicago, and they are given the regular wholesale price. We only furnish one type of frame, the simplest type of steel, with no fancy additions. Occasionally we have the matter come up where they wish to use tortoise shell frames or other styles, but we tell them if they are proper cases for the clinic, they should not be indulging in such luxuries.

Dr. Samuel G. Higgins, Milwaukee: Mr. Chairman, I would like to ask Dr. Davis what is found in reference to these students when they become university students? Is there any way of overcoming the prejudice that people have about putting on glasses, that if they put them on in early childhood they have to wear them all their life? Do you believe that is an advantage to the person? What is done in the university about this.

Dr. Frederick A. Davis, Madison: Among the university people I do not find such complaints. The university students have become too well educated, they realize the advantages of glasses; but I do find such objections at times in other patients. No doubt all of you have found the same in your private practice. The objection to glasses in the case of a school child is a matter of daily occurrence. Parents fear that once they have worn glasses it will be necessary forever. I cannot say, as far as my university work is concerned that that would apply to all.

Dr. L. A. Allen, Oshkosh: Mr. Chairman, we started in Oshkosh in 1896 to do this child study work, and at that time the profession volunteered their services in making these examinations. The whole city was districted. We found that the plan did not work out at all well so far as the eye, ear, nose and throat work was concerned, because these people would say, "Well, Dr. Allen has glasses for sale," or "Dr. Allen can see faults because he sees a chance to remove them and get a fee for doing it," and the plan did not work at all well.

However, when the Welfare Association started, first under the Associated Charities, and the nurses made the preliminary examination, everything was smoothed out, and we have a Health Center now under the reconstruction work, and the children are taken care of in connection with that Health Center. I believe they have one at Green Bay also. We are doing every part of the work, the venereal and everything else, and we rotate in service in the Eye Department, and I am obliged, according to the rotation, to give a portion of one afternoon a month. Our work is voluminous, and we do it through the various nurses. We have a visiting nurse, and under the Visiting Nurses Committee, and we have two school nurses, making three nurses. As a result of that work these cases are fairly well sorted, and those that are not entitled to the free services are eliminated. As far as the glasses are concerned, they pay at least the wholesale cost.

Dr. F. S. Cook, Eau Claire: Mr. Chairman and Gentlemen: We started to handle this proposition in Eau Claire I should think about 8 or 9 years ago. We began by districting the doctors, and assigning doctors to the different districts, but the plan did not work out. Then the work was thrown onto the Associated Charities, and was handled through the visiting nurses. We haven't any established clinical rooms, or anything of that kind, but these cases are apportioned out among the doctors. The Medical Society unanimously decided that all would offer their services in handling the cases in this way, and the cases are apportioned out to the men, and brought to the men by the visiting nurses. All these cases are investigated as to financial condition, etc., before they are brought in, and we know pretty well who is coming in.

Another thought that struck me in this discussion, was that there was nothing mentioned with relation to the men who are lecturing to the nurses. Now most everybody is connected with some hospital, and they are lecturing to nurses more or less, and I believe it to be our duty to prepare these nurses for this work, because we do not know who is going into it, and it is a good thing to give the nurses a good preparation as to methods of diagnosis, when they need to make a diagnosis.

Dr. Samuel G. Higgins, Milwaukee: Mr. Chairman, there is one thought which occurs to me that might be mentioned, and which might come to our attention at some time, and that is the size of type used in school work, since the cost of paper and printing is going higher. The type applies not only to the school books,

but also to the daily papers, if there are in certain communities newspapers of larger type, we might make the suggestion to the parents that the children read papers printed in the larger type. It might also be suggested to the Press Association that they not reduce the size of the type used in the paper on account of the volume of news:

In regard to very young children I think it is important that all books used by them, such as picture books, be of as large print as possible.

Dr. Joseph Bellin, Green Bay: Mr. Chairman and Gentlemen: With reference to muscular weakness, I agree with Dr. Black. It was just an oversight on my part in not mentioning it.

I wish to say also with reference to the clinics, that in Green Bay we have a clinic which is under the Public Health Service at present, and in charge of our city physician, who was appointed for that purpose. He has charge of all the examinations of the children that are referred to the clinic for examination. If the children need surgical attendance in any way along the line of eye, ear, nose and throat, they are referred to the various specialists, as their turn comes around.

VENEREAL DISEASES—PHYSICIAN'S RESPONSIBILITY FOR THEIR CONTROL.

By Millard Knowlton, M. D.

Modern Medicine,

Vol. iii, No. 1, January, 1921.

The venereal diseases are for the physicians alone. Osteopaths, chiropractors, and Christian Scientists are constrained to withdraw from the field. This adds a greater responsibility to the medical man. He must in the first place be thorough. Carelessness impresses the patient unfavorably and he loses faith in the medical profession. If the medical profession is to maintain its prestige and the confidence of the public it must be able to meet the increasing demands of an enlightened public.

Remembering that each uncured case of venereal disease is dangerous to the public, the physician must either undertake to give the best possible treatment or refer him to a physician who will. It is within the physician's power and his responsibility to see that proper treatment is given to all sufferers, regardless of race, color, or social position. Most patients can afford to pay a reasonable fee, and for those in an infectious stage who cannot, the boards of health provide arsphenamine free. It is up to the physician to be big-hearted enough to see that the drug is properly administered.

In rural states, it is proposed that the medical men of each community confer and select one man who is willing to make a specialization of the study of venereal diseases. This man, who thus qualifies himself should be selected to treat the indigent patients. This plan would be advantageous to the medical profession and to the public.

It is the duty of the medical men to prevent spread of venereal diseases by the proper treatment of the existing cases. For the best results, united and co-operative efforts for encouraging specialization are required.

CANCER RESEARCH.

Cancer research, stimulated by the visit of Mme. Curie and by the progress in experimentation reported by Dr. Francis Carter Wood, Director of the Crocker Laboratory, will be taught at Columbia University during the Summer Session, it is announced.

The course will be given at the Crocker Laboratory, 1145 Amsterdam Avenue, where large numbers of tumor-bearing mice are patients, and will deal with the morphology and biology of tumors, under the direction of Prof. W. H. Woglom of the laboratory staff.

"The instruction," says the announcement, "will consist of a series of lectures and laboratory exercises, and is intended to give the student sufficient experience to enable him to diagnose all the commoner varieties of tumors. It is planned especially for the needs of those who are to take up hospital or public health laboratory positions which may require the microscopic diagnosis of tumors.

"The classification of human and animal tumors will be first considered. The method of transplantation of tumors in animals will be shown. The simpler procedures for fixing, sectioning, and staining tissues for diagnosis will then be taken up. The major portion of the time, however, will be devoted to the study, from a diagnostic aspect, of human tumors, with practical exercises in diagnosis and demonstration of a large series of type slides."

A series of courses in medicine will also be given this summer by the College of Physicians and Surgeons. Prof. O. S. Strong will teach neuro-anatomy at the Neurological Laboratory, and a course in clinical pathology will be directed by Prof. K. M. Vogel, at the Laboratory of Clinical Pathology. Dr. P. C. Potter will give instruction in minor surgery and bandaging at the Vanderbilt Clinic. Other summer courses include anatomy and bacteriology.

BRONCHO-PULMONARY SPIROCHETOSIS.

The occurrence of broncho-pulmonary spirochetosis is comparatively rare. This circumstance, together with the peculiar characteristics of the disease, makes it a particularly individual problem. The victims of this disease are apparently suffering from tuberculosis. They have recurring hemoptysis for months. Usually chronic bronchitis, with lose of weight, emaciation, and a chronic cough ensue. Hemorrhages sometimes last for weeks and then may stop for weeks. These cases are not tuberculosis, however, for upon examination of the sputum no tubercle bacilli are found but large numbers of motile spirochetes. Bloedorn and Houghton in a report of three cases found that these organisms are more refractive and active than the treponema pallida, and that they tended to be of two distinct types. One type was thin,

delicate, and threadlike with more regular and numerous indulations; the other type was coarser, with few indulations and heavier staining.

There has been little investigation made upon this disease. Castellani first described it in 1906. Since then there have been reports of cases occurring for the most part in the tropical climates. It is probable that the disease is more common in the United States than is realized, but because of its close symptomatic resemblance to tuberculosis, it is seldom recognized until the sputum is examined and the characteristic organism identified. Cases respond to treatment with the arsphenamins very rapidly. There have been cases which when treated for tuberculosis were considered hopeless but when treated with arsphenamin, have recovered completely.

In view of the fact that this disease is more prevalent than is realized and that it does respond to treatment, it is important that every case of supposed tuberculosis that does not show tubercle bacilli in the sputum should be carefully examined for spirochetosis and syphilis. Prompt and intensive treatment with the arsphenamins may be expected to produce well-nigh miraculous results.

AN EXCHANGE SAYS:

"The doctor gets it coming and going. If he dresses well he is a fop; if he does not, he is careless or even dirty. If he has a library he is too theoretical; if he has not, he neglects study. If he comes promptly, he has nothing to do, if not, he is neglectful. If he is quiet he is called unsociable; if he is not quiet, he talks too much. If the newspapers take notice of him, he gets credit for exploitation and fondness for seeing his name in print; if he does not get his name in the papers, he does nothing worth while. In other words, the qualities and characteristics which please one set of people are the selfsame qualities for which he will be condemned by others. To paraphrase the poet:

"Rattle his bones over the stones,
He's only a doctor whom nobody owns."

QUANTITATIVE ESTIMATION OF TOTAL PROTEIN IN CEREBROSPINAL FLUID.

Increase in protein is probably the earliest and most constant abnormality noted in the cerebrospinal fluid under pathologic conditions. With its diverse sources of origin, then, protein determination becomes of fundamental importance as a nondifferential test. No other test wholly supersedes it, and certainly no differential protein test wholly displaces it. Briefly, the method devised by Denis and Ayer and which was used by James B. Ayer and Harold E. Foster, Boston (*Journal A. M. A.*, July 30, 1921) consists of precipitating the fluid protein in a colloidal state by the means of a colorimeter against a standard prepared at the same time from a blood serum solution of known protein content. The percentage of error by this method was found to be less than five. While protein values in different pathologic states are of only relative worth, certain disease entities or conditions do appear to give fairly constant readings. From more than 2,100 quantitations from approximately 800 patients, the authors have used 429 from as many patients. Any total protein quantitation above 40 mg. per hundred cubic centimeters is distinctly pathologic. The findings obtained in cases of syphilis of the central nervous system, non-neurologic syphilis, vascular hypertension, epidemic encephalitis, poliomyelitis, meningitis, degenerations of the central nervous system, brain tumor, brain abscess and epilepsy are discussed. It is believed that in many neurologic diseases the appearance of abnormal amounts of protein in the spinal fluid is one of the earliest detectable signs of pathology or altered physiology, and that it constitutes a nondifferential reaction of fundamental importance.

DETERMINATION OF BASAL METABOLISM.

The chief rôle of indirect calorimetry in the clinic of today, James H. Means, Boston (*Journal A. M. A.*, July 30, 1921) says, is the quantitative estimation of thyroid function and the acurate representation of the effects of treatment, either those measures in hyperthyroid states which are designed to reduce thyroid activity, or thyroid therapy in conditions of hypothyroidism. Outside of thyroid disease, the metabolism determination as a diagnostic procedure or functional test does not play an important rôle. It is obvious that when hypothyroidism or hyperthyroidism is suspected, metabolic studies will be of great assistance in the differentiation of effort syndrome and mild hyperthyroidism, for example, and of toxic from nontoxic goiters, or in the borderline hypothyroid conditions. One other direct clinical application is in the matter of obesity. Studies have shown that in simple obesity the basal metabolism is normal. Such obesity is due to a disproportion between food intake and bodily activity, and not to any fundamental change in the rate of combustion in the body. In such persons the giving of thyroid raises the metabolism to an abnormal level—produces hyperthyroidism, in other words. The treatment, then, of simple obesity with thyroid is pernicious. It relieves one evil by creating another. Means says he has been impressed of late with the very common use of thyroid by the laity for purposes of weight reduction. He thinks the sale of this drug, except on prescription, should be prohibited by law. Metabolism studies have convinced him that thyroid should never be given except to persons who exhibit subnormal metabolism. By means of the metabolism determination, the case of simple obesity can be differentiated from obesity due to endocrine disease. This applies not only to hypothyroid obesity but to pituitary as well. In hypopituitarism there is a reduction in metabolism level just as in hypothyroidism, though perhaps of lesser degree, so that calorimetry may help us in recognizing obesity of pituitary origin also. Of diseases other than of the thyroid and pituitary in which there are alterations in basal metabolism, the most striking are the leukemias and severe anemias, particularly pernicious anemia.

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EDITORIALS

THE JOURNAL
IS
YOUR FORUM—
WE INVITE YOU
TO UTILIZE
IT FOR THE
EXPRESSION OF
YOUR VIEWS
ON
MEDICAL SUBJECTS

A GORGAS CREED

It is a Physician's duty to urge forward in his community those measures which will control individual diseases, but my long experience has taught me that it is still more his duty to take that broader view of life which goes to the root of bad hygiene and do what he can to elevate the general social condition of his community.—Gorgas.

WHY NOT USE OUR SANATORIA MORE?

IT has been said that the diagnosis of early clinical pulmonary tuberculosis is at times one of the most difficult problems in internal medicine. There can be no doubt that in a certain percentage of cases this is absolutely true. The history may be vague and indefinite, the physical signs too slight to carry conviction, and yet there may be a something about the case that will not enable the physician to say positively yes or no. *Why not use your County Sanatoria in such cases?*

A stay of ten to fourteen days for observation at a Sanatorium, where accurate temperature and pulse records can be kept, where frequent physical examinations can be made under ideal conditions, when repeated sputum examinations can be obtained, where tests helping to differentiate early tuberculosis from other conditions—the Goetsch test for instance—can be applied, and where possibly the fluroscope or the aid of the stereoscopic plates can be called upon, should prove of incalculable value in reaching a definite conclusion in these doubtful cases. The time of the patient spent at the Sanatorium for this study is of very little import compared to the value received.

The time has passed when the Sanatorium that simply acts as a home for incurable tuberculosis patients can claim to be fulfilling its mission. The up-to-date sanatorium must do more than that and in assisting the physicians of the community to confirm or exclude a diagnosis of tuberculosis, is doing no more than its duty.

We send patients to the general hospitals almost every day to avail ourselves of its facilities in helping to make a diagnosis—*why not use our Tuberculosis Sanatoria more for this purpose?*

THE STUDY AND CONTROL OF CANCER IN WISCONSIN.

THE first attempt at a state wide study of cancer in Wisconsin followed as a result of a recommendation made by Dr. A. J. Patek in his Presidential Address before the 67th Annual Session of the State Medical Society held in 1913. A committee was appointed which undertook a survey of the prevalence, the duration of the disease before securing medical advice, the efficiency of the treatment employed and the end results accruing from the treatment, but owing to the failure to receive cooperation from the profession throughout the State, the committee made a preliminary and necessarily incomplete report and asked to be discharged. The question was discussed briefly before the House of Delegates and Councilors during each succeeding session up to 1920, when President C. R. Bardeen appointed another committee charging them with the duty not only of a study of the prevalence of cancer but with an attempt to conduct a campaign of education directed to enable both the Medical and Dental Professions and the laity to bring about earlier diagnoses. This Committee consists of W. E. Ground, Superior, Edward Evans, La Crosse, C. H. Bunting, Madison, J. P. McMahon, Milwaukee, and W. K. Gray, Secretary, Wells Building, Milwaukee.

The Committee has been working on the questions and problems involved during the last year and have finally prepared a program which in its opinion is entirely feasible and should be fruitful of far reaching results.

Since cancer causes approximately one hundred thousand (100,000) deaths in these United States each year, being surpassed as a cause of death only by diseases of the heart, pneumonia and tuberculosis, there is at the present time probably no preventive medicine campaign of more vital importance to all classes of people.

The prevention and cure of cancer occupies the same medico sociologic position today which the prevention and cure of tuberculosis did in 1910. It is hoped that the results of the Cancer Campaign in Wisconsin will at least approach the enviable educational record made during the last 10 years by the Wisconsin Anti-Tuberculosis Association.

The plans for the proposed Campaign are as follows:

The educational work will be carried on under the direction of the Councilors and Committee on Cancer of the State Medical Society,

The State Dental Society,

The Wisconsin State Nurses' Association,

The Wisconsin Pharmaceutical Association,

The University of Wisconsin Extension Division,

The State Board of Health,

The Health Department of the City of Milwaukee,

The Wisconsin Anti-Tuberculosis Association and,

The American Red Cross.

An attempt will be made to enlist the active cooperation of the Wisconsin Press Association,

The Wisconsin Federation of Women's Clubs,

The State Teachers' Association,

The Parent Teachers' Association,

Labor Unions,

The six Old Line Life Insurance Companies, and,

The twenty-two Fraternal Societies, and such other organizations as can be interested.

The State Medical Society and the University of Wisconsin Extension Division will conduct courses on the early diagnosis of Cancer to be presented before the joint meetings of the several County Medical, Dental and Nurses Societies.

The State Board of Health through its Executive Officer, Dr. C. A. Harper, has undertaken the full direction of the lectures and demonstrations before lay audiences throughout the State. It is Dr. Harper's plan to arrange for at least one lecture in each of the fifty cities throughout the State having a population of over 5,000 during "National Cancer week, October 30th, to November 5th." Dr. Harper will need and should receive the cordial and active cooperation of all of the members of the State Medical Society in this and subsequent undertakings which will be directed toward arranging for lectures in every village and township in the State.

The Health Department of the City of Milwaukee through its Commissioner, Dr. George C. Ruhland, has undertaken the arranging of the lec-

tures to the laity of Milwaukee County in connection with a six-day "Health Exhibit" program which has been planned for the latter part of November.

Additional information with reference to this Educational Campaign will be forwarded to the Members of the State Medical Society from time to time by the Councilors, the Committee on Cancer, the University Extension Division and the State Board of Health.

Those desiring detailed information, literature, etc., should not hesitate to address Dr. Harper, State Health Officer, Madison.

SEVENTY-FIFTH ANNUAL MEETING.

THE home-coming meeting held in Milwaukee, September seventh to ninth, was generally conceded to be the best meeting that the society has ever held. The registration approached the 600 mark, which is the largest attendance ever recorded at a meeting of the association. Approximately thirty per cent of the members in the state were in attendance. Members of the society arrived the morning of the first day and the majority stayed until the last paper was read, Friday noon.

The scientific program, much of which was furnished by former Wisconsin men, met all expectations. Those unable to be present will have the opportunity of reading these papers in the Journal during the coming year. The following officers were elected for the year 1922:

President—Sidney S. Hall, Ripon.

1st Vice-President—Louis M. Warfield, Milwaukee.

2nd Vice-President—Spencer Beebe, Sparta.

3rd Vice-President—Rolla Cairns, River Falls.

Councilor 3rd District—E. B. Brown, Beloit.

Councilor 6th District—F. G. Connell, Oshkosh.

Councilor 9th District—Jos. F. Smith, Wausau.

Councilor 10th District—R. E. Mitchell, Eau Claire.

Committee Public Policy and Legislation—

Edward Quick, Milwaukee.
George Ruhland, Milwaukee.
O. B. Bock, Sheboygan.

Delegate to American Medical Association—

Jos. F. Smith, Wausau.

Alternate to American Medical Association—

W. F. Lorenz, Mendota.

Member Committee on Health and Public Instruction to succeed Edward Evans, La Crosse—Ira F. Thompson, Madison.

Member Committee on Hospitals to succeed F. G. Connell, Oshkosh—Jos. Lettenberger, Milwaukee.

The Committe on Public Policy and Legislation was increased to include the Councilors. All other delegates and committees were re-elected.

AS OTHERS SEE US.

(Editorials from the Lay Press.)

THE PIONEER DOCTOR.

Each state and each community holds in high regard the pioneers who brought civilization into the wilderness, who braved the perils and the hardships incident to the creation of a new territory and to whose sturdy strength is due the impetus which built up great cities and magnificent states.

But with the sturdy pioneer who carved the little hamlet out of the woods, the valiant trader who brought commerce to the little communities, the builder and the planner who visioned the possibilities of town sites and foresaw commercial and industrial possibilities, there came another pioneer, not to build but to save, not to establish trade or to create the highways for trade to traverse, but to heal and help those who, in the struggle, found themselves attacked by disease.

The pioneer doctor deserves as great a place in the history of any state or city as does the pioneer who contributed with hand or brain to the material growth of the community. His hardships were perhaps greater, at least as great, as those endured by the woodsman, the trapper, the pathfinder or the settler who battled with nature to wrest a home from the forest.

The pioneer doctor had no office hours. He had no quick and easy means of transportation to his patients. His round of calls was not accomplished in a short time each day. His patients were scattered far and wide in a sparsely settled territory. To care for them required long and often dangerous trips over poor roads or no roads, often in

pelting storms and arctic weather, and, in those stern old days when calling the doctor was almost the last resort, with frequent knowledge that on his journey life and death depended.

All these things the pioneer doctors did manfully, willingly and earnestly. They saved lives, they counselled the new settlers as best they could, they gave their time and their strength and their knowledge unstintedly to those who were engaged in a great work. And, being men of education and character, they left, aside from their professional activities their impress on the communities in which they worked.

The state medical society did well to set aside a few moments at its annual banquet to honor the pioneers of its profession. They deserve the honor and they deserve the grateful remembrance of every citizen who rejoices in Wisconsin and Milwaukee and in the men and women who laid the foundations for state and city.—*The Milwaukee Sentinel.*

THE DOCTOR'S OATH.

When the young doctor hangs out his shingle he does it with this, the oath of Hippocrates, fresh in his mind:

"Whatever, in connection with my professional practice, or not in connection with it, I see or hear, in the life of men, which ought not to be spoken of abroad, I will not divulge, as reckoning that all such should be kept secret."

As he goes along in practice and becomes the confidant of many patients he realizes more and more the ethical importance of this oath. One gossiping physician could cause more unhappiness than an entire neighborhood of busy-body tale bearers. But so generally do physicians regard the information obtained in a professional way as sacred that the public considers there is no such animal as the gossiping physician, and, therefore, it was with a good deal of a shock that it read that a so-called doctor from Buffalo had appeared on the witness stand in the most notorious divorce case in years and disclosed information which he said he obtained from a patient. It involved the patient's honor and the paternity of her child.

While this was a particularly damning revelation, any physician could, by revealing professional confidences that were innocent enough in themselves, bring humiliation and suffering to those who had trusted him, and therefore it is not surprising that physicians the country over are unsparing in their condemnation of the Buffalo practitioner, who chanced to be the fad of the hour with a class of wealthy people. The most caustic and pertinent of these that this paper has noted came from a well known physican who said he trusted that in time people would learn to be as careful in selecting their doctor as they were in hiring a chauffeur.—*Appleton Post-Crescent.*

PHYSICIANS AND FEES.

The trustees of Johns Hopkins have decided that a surgeon ought to charge no more than $1,000 for an operation, no matter how wealthy the patient, and that a physician ought to charge not more than $35 a week for attending a patient in a hospital. The Johns Hopkins trustees set themselves a hard task when they undertook to translate into figures in a ledger the value of a doctor's services. Figures cannot express the obligation to the doctor of the man whose health he has restored or of the woman whose life he has saved. Who shall say that the doctor has not done a thing of greater value when, without thought of fee, he has saved a mother for her brood in a hovel than when he has preserved a captain of industry, willing to pay a million dollars to live longer?

No fee can balance the value of the doctor's work. The best we can do is to cancel the obligation with gratitude.—*The Milwaukee Journal.*

THE "MAXIMUM FEE."

The ruling of the trustees of the Johns Hopkins hospital fixing a maximum fee of $1,000 for a surgical operation, "no matter how wealthy a patient may be," has started a question on which, as Sancho Panza observed, there is much that may be said on both sides.

Probably no reputable, conscientious surgeon or institution would charge a wealthy person a deliberately extortionate price. But there undoubtedly has been a practice to charge the wealthy patient a fee judged proportionate to his means or ability to pay.

If the practice has perhaps occasionally entailed on a wealthy patient a charge which he regarded as steep and exorbitant, what about its compensatory effect to the benefit of the poorer class of patients, many of whom can hardly afford a fee at all remunerative to the surgeon or the institution?

Surgeons and institutions not a few have readily, habitually and humanely given of their best skill and attention to poor patients for a merely nominal fee, or practically gratis.

To what extent have they been enabled to do this by the, as it were, sliding scale of fee, the wealthy patient being charged in some general proportion to ability to pay?

There may have been cases where the principle has resulted in an exorbitant charge; and (such being human nature) a charge which one rich patient would regard as exorbitant would be cheerfully and even gratefully paid by another.

Whatever may be said in favor of the Johns Hopkins rule, not a few will feel that in the majority of cases the charge for service may safely be left to the judgment and conscience of the reputable practitioner.—*The Milwaukee Sentinel.*

THE COUNTRY DOCTOR.

A number of small towns in Massachusetts have appealed to the legislature for authority to appropriate funds to subsidize the country doctor. They want to insure his services to the community by paying him a fixed sum annually in addition to the meagre income he receives from his patients.

This seems like one of the most interesting developments of modern civilization. A doctor is needed everywhere and the disinclination of the young physician and surgeon for country practice is natural. He realizes the pecuniary possibilities of the city are much greater. He sees ahead of him the long night rides, the midnight calls, the slow paying patients and the numerous other disadvantages not given to the lot of the city doctor.

The Massachusetts movement is in a way a tribute to a class of men who probably more than any other do good in this world with a smaller degree of credit or other compensation. There is sometimes a tendency to belittle the country doctor, when as a matter of fact he is far superior in professional skill to the city practitioner from the very fact that he has to do his work under difficulties.

Those who have read Main Street will remember Dr. Kennicott's performance of an operation in a lonely farmhouse, with no one to help him but his wholly inexperienced bride. That is a wholly typical instance of country practice. It is being done daily by the modest, quiet, efficient men who are devoting their lives to humanity in rural districts.

The Massachusetts movement is one that is entitled to serious consideration by the legislature.—*The Marinette Star.*

THE JOURNAL CLINIC

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METASTATIC INFECTION.

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Radiographic examinations of teeth have been the main factor in calling the attention of physicians and surgeons and likewise dentists to the great importance which alveolar abscesses and chronic active infections play in disseminating systemic infections. Oral sepsis must be considered under three main heads: first, *pyorrhea,* which has insidiously developed and finally causes the patient to consult a dentist for proper treatment; second, *alveolar abscesses,* which belong to the domain of the dental roentgenologist for definite localization; and, third, *metastatic infection,* which has extended beyond the scope of the dentist, and a syndrome of symptoms has developed, directly traceable to imperfect fillings, improper bridgework, and, in general, malocclusion and neglected dental hygiene, for which the patient consults a physician.

The dental profession has remarkably readjusted its mechanical technic to harmonize with the recent information reflected by Roentgen rays.

The majority of cases of pyorrhea develop in young adult life, alveolar abscesses in middle adult life, and metastatic infections in middle or past middle adult life; and it is interesting to note that very few men of fifty years of age or over who show advanced stages of dental sepsis, are normal physically.

Oral surgeons who have interested themselves in mouth infections state that 50 per cent or more of devitalized teeth show Roentgen shadows, and that 75 per cent or more of snags of teeth left by

decay show shadows. It behooves everyone who has devitalized teeth to have an X-ray examination made at frequent intervals, say every year or two, to determine whether or not periapical sepsis is developing. I think that all teeth where the nerve has been devitalized are better out than in because, sooner or later, the pulp and the peridental membrane will become infected, and then they will cause trouble. It must be borne in mind that oral sepsis is a strong contributing factor in raising the blood-pressure and in involving the cardiovascular system, ultimately leading to the syndrome of symptoms of chronic interstitial nephritis and chronic myocarditis.

Oral sepsis should be approached and investigated with a discreet and sound clinical mind, for, otherwise, the looked for and anticipated results may fall by the wayside, as oral sepsis is not the cause of all ills but frequently only adds to the ill effect of other diseases. We must not be carried away by over indulgence in enthusiasm, and we must remember that infective conditions of the body, such as cholecystitis, pyonephrosis, or osteomyelitis, may be an influential factor in starting a periapical abscess in devitalized teeth.

Vital teeth should not be indiscriminately extracted, for they are a valuable appendage in the mastication and proper digestion of food and should be extracted only when they show an irreparably diseased condition of the roots. Pyorrhea can be, and should be, treated without opening the question of extraction.

Case 1. Brakeman B., aged 36, was in a collision January 20, 1919. After he had received the usual treatment for bruises and sprains with more or less bed confinement, he was referred to me by Dr. L. H. Labbitt, of Enderlin, N. D., for the reason that he did not make the anticipated progress towards recovery.

March 20, 1919: He walked bent over, with a stiff and guarded gait. He complained that the lower part of his back always hurt him and that pain ran down on the outside of both thighs to the knees. He complained also of soreness in front, on the right side of the chest, just below ribs. The patient thought this soreness in his chest started from the pain in his back. Both knees appeared stiff and sore to him, more so at night.

Patient stripped: Had pain over the fifth dorsal spine, extending, in lesser degree, to the eighth spine and then radiating along the right side of the chest; also had pain in the upper right gluteal muscles and in the right lumbar region.

Heart, normal. Blood pressure: Systolic, 128; diastolic, 68; pulse-pressure, 60. Urinalysis: sp. gr., 1012, and normal.

Teeth: Patient had ten teeth in the lower jaw; one-half were loose on account of infection. He had ten teeth in the upper jaw; one-half were loose. He also had four stumps in upper jaw.

March 20: Patient was sent to dentist, Verner Nillson, for radiographic diagnosis of questionable teeth, who reported that all his teeth were in such an infected condition that, in order to obtain a good result, all should be extracted, to which the patient consented.

March 21: Patient stated that he had slept all night for the first time in three weeks and that he felt much relieved.

This patient certainly was not a malingerer, or else he would not have consented to have all his teeth extracted. He made a progressive recovery and resumed his former occupation three weeks after the mouth-infection had been cleared up.

The system eliminated the infection as long as the patient was in active occupation, but as soon as his resistance was lowered by trauma and confinement the system became overburdened with increased intoxication. Trauma to joints, ligaments, and muscles lowers resistance and in this manner increases the susceptibility to infection, particularly if a certain strain of micro-organisms have an affinity for the structures injured. Subdeltoid bursitis, traumatic lumbago, muscular rheumatism, etc., should be regarded as infective in character; and a thorough physical examination should be made, in order to locate the primary infecting focus.

I have cited this case to direct attention to the relationship which exists between primary oral sepsis and lowered resistance caused by trauma.

Case 2. Farmhand, M., of Phillips, Wis., was examined by me August 1, 1917. He was taken ill February, 1917, with what he called La Grippe and since then had not been able to work.

Complained of heart trouble, sour stomach, headache, and backache. He had been constipated since February and his bowels did not move unless he took medicine, sometimes going without a movement for two or three days. He had band-like feeling across the abdomen; was easily tired; and sweat profusely on exertion.

Pulse: standing, 108; sitting, 100. Cardiac arhythmia. Temperature, 99.25. Urinalysis, negative; sp. gr., 1018 and alkaline. Heart beat laboriously. Neck, fairly prominent. Eyes, staring. Tonsils, enlarged and apparently infected. Teeth revealed a small bridge, and two were devitalized.

The diagnosis was not made, as there was a question between exophthalmic goiter, traumatic neurasthenia, and chronic myocarditis.

He answered questions so annoyingly slow that it was hard for the examiner to have patience to make a complete examination. One would class him as being morose and very defective in mental acumen.

His diet was regulated, and he was given elixir, iron and quinine with strychnine phosphate together with Hinkle pills and small doses of calomel. He was advised to return in one month for further observation.

August 29: At this examination nothing new was disclosed, and the previous treatment was continued.

He was advised to have his tonsils removed, at which suggestion he was overcome with emotion and tears coursed down his cheeks.

September 18: The patient presented himself to have his tonsils removed. Before doing that, however, it seemed advisable to have him examined by a neurologist.

I had Dr. Arthur S. Hamilton examine him from a neurological standpoint. Dr. Hamilton was also doubtful as to a clear diagnosis after a complete physical examination. He thought that the patient was mentally unbalanced and that the symptoms suggested catalepsy. His blood-pressure was high for his age, and an infection of some character had to be taken into account in arriving at a definite conclusion. He advised radiographic examination of his teeth which revealed two alveolar abscesses in the upper left jaw. One of these abscesses was detected on a snag which had been bridged over from a crowned tooth.

September 20: At the hospital, under ether, I removed two large inbedded tonsils which were found extensively diseased and harbored pus pockets. I removed one abscessed crowned tooth and one infected snag.

September 22: Patient left the hospital and was told to report later that I might note whether or not his symptoms had been ameliorated.

October 8: His blood-pressure had decreased 20 mm. Urinalysis, negative; sp. gr., 1012. His intelligence revealed marked improvement, and he answered and asked questions freely, while previously he was aggravatingly drowsy and showed inability to concentrate, which was likewise observed by the ones who had known his slow and torpid mental state before the removal of his abscessed tonsils and teeth.

On November 8, 1918, I received a letter from him from Camp Grant, stating that he was now a full-fledged private, and that he continued to make progress towards recovery, which showed that he must have recovered sufficiently to pass the rigid physical examination in order to enter military life.

Case 3. On February 13, 1915, I was called to the house of laborer M., aged 62, who had had vague rheumatic pains for the past two weeks over different parts of the body, but had not given the matter serious attention until red rashes developed about both ankles, extending towards the knees. When I saw him three-fourths of both legs were involved, and the patient had estimated how many days he would live before it would reach his heart, calculating from the progressive spreading from day to day on the lower extremities. Dr. Clarence A. Boreen examined the patient from a dermatological standpoint and pronounced the condition as hemorrhagic rheumatism. He advised extraction of his carious teeth and infected snags with the proper treatment of pyorrhea alveolaris. After the extraction of the patient's infected snags the rheumatism disappeared and the purpuric rashes subsided without salicylate medication.

Extravasations under the skin, commonly known as purpuric rashes, are now considered to be associated with some infection, such as rheumatism, etc.

The pathology of rheumatism has gradually unfolded a different meaning to the medical profession, and the term "rheumatism" will likely be as obsolete in thirty years from now as the term "scrofula" is today. When I began to study medicine thirty years ago the word "scrofula" had just as much relationship to tuberculosis as rheumatism has today to primary focal infection.

The extraction of teeth with abscessed roots nearly always leads to an exacerbation of lesions in distant parts of the body which were originally caused by the dissemination of micro-organisms or their products from their alveolar process. In less than twenty-four hours active exacerbation may supervene in chronic infected appendix, gall-bladder-tract disease, genito-urinary-tract disease, or inflammatory conditions of joints. Such a prompt and fulminating reaction in the secondary focus must be regarded as a rapid growth of organisms already there which are more or less latent, rather than as a recent dissemination. Conversely, chronic pathological conditions which appear rather urgently to indicate operative procedure occasionally clear up after such a simple process as the extraction of an infected snag, and this is even more gratifying in some organs which cannot be handled surgically, such as chronic interstitial nephritis and cardiac arhythmia.

In pyorrheal pockets the tissues come into contact with alien proteins due to the activity of bacteria, protozoa, etc., and the question of interest is whether or not anaphylactic reaction is a factor of clinical importance in the causation of functional or organic disease. Protein sensitization or tolerance has not been conclusively worked out, either in the laboratory or clinically, which might shed some light on the fatalities occasionally encountered in the extraction of too many abscessed teeth at one sitting.

I have clinical memoranda of somewhat over four hundred cases where the condition of oral sepsis has had something to do with the symptoms for which the patients consulted me. Two of these terminated fatally, and I consider these the most important, consequently, I shall report them in extenso.

Case 4. On August 30, 1919, I saw a case in consultation with Dr. Godfrey Deziel which is illustrative of the reactions as above set forth:

Locomotive engineer, W., aged 53; weight, 220 lbs. He had been ill three weeks with a heart lesion. He had three chills, the last and most severe last night. His temperature went up to 105°, and he complained of pain over both lumbar regions.

Blood-pressure: Systolic, 108; diastolic, 70; pulse-pressure 38. There was marked mitral regurgitation due to ulcerative endocarditis evidently with streptococcic infection. He had a number of filled teeth; several devitalized and some carious, with marked pyorrhea about all teeth. Urinalysis; sp. gr., 1022; slight amount of albumin. Microscopic examination of the urine did not disclose any casts or pus; but many urates.

Prognosis, unfavorable.

September 4: St. Barnabas Hospital. Radiographic

examination showed one abscessed tooth and three infected stumps. Dentist Henry B. Clark extracted four teeth under novocaine. The patient died suddenly eighteen hours later.

All cases with ulcerative endocarditis of streptococcic origin sooner or later succumb, but, while this patient died in eighteen hours following the extraction of his infected teeth, one naturally debates between an exacerbation of the already existing cardiac lesion and anaphylactic phenomena.

The last case that I desire to include in my discussion is one of dramatic interest, showing how one pathological condition leads up to the next graver one.

Case 5. Bakery driver, S., consulted me on April 12, 1919, for sick headache, which he had had for the past three days, and for general rheumatic pains over the body. He stated that recently he had been to a dentist for the filling of some of his teeth. Upon inquiry I learned that no radiographic examination had been made. On April 14, Dentist Arthur E. Swanson radiographed his teeth and found eight abscessed, which he immediately extracted under gas anesthesia. On April 19, the patient had a chill followed by pneumonia, from which he recovered by lysis with a protracted and stormy convalescence. Marked albuminuria was present during pneumonia. Death occurred October 4, 1919, and it must be admitted that the primary cause was oral sepsis, which lead from one disease to another until the final sequela was reached: infected teeth; rheumatism, nephritis; pneumonia; myocarditis; uremia; convulsions; and death.

It has been my invariable rule to caution patients not to have any dental work done until a radiographic examination has been made of the roots for the purpose of determining definitely whether or not the teeth are diseased. No vital teeth require roentgenological examination, for it has been definitely proved that vital teeth are never abscessed.

In conclusion I may add that any clean operation, such as for hernia or ununited fracture, should not be undertaken until the system is entirely freed from all infections. Furthermore, if a patient has two infected conditions, one of which can be handled in an ambulatory way and the other of which must be handled in the recumbent position, it is often best to await complete recovery from the former before operating on the latter,—in other words, activity shortens and confinement delays recovery.

PREVENTIVE MEDICINE

Edited by
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THE WORKMEN'S COMPENSATION ACT AND THE DOCTORS.*

BY MR. THOMAS F. KONOP,
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Compensation to injured workmen, under our law, comprises two things; first, medical and surgical attendance, and second, weekly money indemnity of 65% of the average weekly earnings. These two benefits are so linked together that they are dependent on each other. The amount of the second depends largely upon the character of the first. The better and more skilful the medical treatment, the lesser the period of compensation disability. Unskilful and negligent medical and surgical treatment lengthens the period of compensation disability, makes compensation costly to the industry and many times unnecessarily makes a cripple of the employe. To my mind, skilful and adequate medical and surgical treatment is more important to the injured employe and to the employer as well, than the money indemnity provided under the law. Skilful and adequate medical and surgical treatment is absolutely essential to the restoration of an injured employe's earning capacity; and yet in nearly all of the compensation laws of the country there are limitations on this service. Some of the laws limit as to time, ranging from two weeks to ninety days, and others as to cost from $25 to $300 and others as to both. In our own state, medical and surgical attendance was originally limited to ninety days and now by amendment "for such additional period as will tend to lessen the period of compensation disability." Be it said to the credit of employers and insurance carriers that, in practice, since that amendment they have been furnishing complete medical and surgical attendance to injured workmen. I remember only one case where there was a refusal to continue medical and surgical attendance beyond the ninety-day period, so that now in Wisconsin there is practically no limitation on this service and injured workmen are given complete medical and surgical treatment.

*Read before the Industrial Service Conference, Appleton, May 9-11, 1921.

Let me quote to you, in part, the provisions of our act pertaining to medical and surgical treatment. The formula of this quotation was in the original act, and has been considered so complete that it has been copied by nearly all of the states in the union. Under our act the employer must furnish "such medical, surgical and hospital treatment, medicines, medical and surgical supplies, crutches, and apparatus * * * as may be reasonably required for ninety days immediately following the accident, to cure and relieve from the effects of the injury, and for such additional period of time as in the judgment of the commission will tend to lessen the period of compensation disability. * * * And in case of his neglect or refusal reasonably to do so, the employer to be liable for the reasonable expenses incurred by or on behalf of the employe in providing the same. Where the employer has knowledge of the injury and the necessity for treatment, his failure to tender the same shall constitute such neglect or refusal. * * *"

Under the above provision, the commission has repeatedly ruled that with this duty imposed upon the employer is a corresponding right to select the physician and surgeon who shall treat the injured workman. The employer, therefore, is given the right to select and has been exercising that right and insisting upon its exercise in this state.

You have undoubtedly heard that there is a movement on foot to change the system and to give the right of selection to the employe and you are undoubtedly interested in this phase of the subject. I shall try to frankly state to you the reasons why there is a demand for this change. Personally, and I believe that my colleagues on the commission hold to the same view, I am opposed to any radical change in the law. I believe that the present system is working satisfactorily in Wisconsin and that the kind of medical and surgical service that is being furnished to injured employes is of the best.

There are many reasons why the employer should select the physician and surgeon who shall treat the injured employe. In the first place, he is in a better position to select a competent skilful physician and surgeon. In the second place, he is interested in the speedy recovery of the injured and this is an inducement to him to furnish the best medical and surgical skill. Then too, the employer has to pay the expenses and he should have the opportunity to make the best bargain and, thus, reduce the cost of this service. It has been claimed that where the physician and surgeon is selected by the employe the treatment is unnecessarily prolonged, bills are padded, and malingering sometimes promoted. We do not need to go outside the records of our own commission to find evidence of padded bills.

With all these reasons in favor of the present system, why then should there be a demand for a change? In the past two or three years this demand has grown up not only in this state, but all over the country. I again inquire, why this agitation for a change?

In 1919 a bill was introduced in the Wisconsin Legislature to amend the law and give the injured employe the right to select his doctor. In a meeting between the representatives of employers and labor an understanding was finally reached to the effect that the bill should be withdrawn, that representatives of employers would take the matter up with their members and insurance carriers and bring about the condition that would give the injured employe a choice of another physician and surgeon, if he was dissatisfied with the one offered. Practically nothing was done to carry out this agreement. Let me illustrate what happened shortly after in a case of an injured workman from Oconto county,—the man had sustained a fracture of the leg below the knee; the fracture was set and it was discovered that there was no bony union. The fragments were then plated and later on, the plate was removed and still no bony union. At a hearing on the case the respondent offered to the applicant a bone graft operation by a competent physician and surgeon. By this time the applicant, however, had lost confidence in the physicians and surgeons selected by the insurance carrier and refused to submit to such an operation. After much persuasion on the part of the commission the applicant consented to submit to a bone graft operation, but insisted that the operation be performed by a physician and surgeon whom he named and who was competent to do a good job. The insurance carrier arbitrarily insisted on his right of choice and the result was that the applicant refused to have the operation at all and now, for all we know, he is going about with a fibrous union when he could have had a good leg. Would it not have been better in such a case that the insurance carrier had not arbitrarily insisted on his

right to select under the statute, especially in view of the fact that the physician and surgeon of the insurance carrier had been unable to secure a bony union? Is it any wonder that some demand for a change from the present law has grown up? Such cases are not numerous yet they exist nevertheless and stir up considerable agitation against the present system.

In the present legislature two bills have been introduced on this subject, one by Assemblyman Schafer, 67A, which if passed would give the employe the right to select his own doctor and give the commission the power to fix the fee; and one by Senator Huber, 233S, which would give the employe a right to make a choice from a panel of physicians and surgeons named by the employer. These bills would probably not have been presented if something had been done following the conference in 1919, and if in cases where the injured employe desired a change of doctors the respondent and insurance carrier had not been so arbitrary in insisting upon their right of choice under the statute.

What are some reasons that are being advanced for the change? First, it is argued that the relation between a physician and patient is personal and confidential and that best results are obtained from treatment by a physician and surgeon in whom the patient has confidence. Second, the physician and surgeon selected by the employer restricts the period of disability and requires the injured employe to return to work too soon in order to lessen indemnity payments. Third, it is argued that the physician and surgeon selected by the employer is too much devoted to the interests of the employer. And, added to this we have the cry of the medical profession objecting to the concentration of medical and surgical work into the hands of a few. Undoubtedly, some of the demand for a change has been due to propaganda from the doctors themselves.

Let us look at these reasons squarely in the face and treat them with common fairness. Take the first; is it not a fact that the relation between physician and patient is a confidential relation? It is so recognized by law and statutes have been enacted in every state in the union treating as confidential matters disclosed by the patient to his physician. At compensation hearings, has not the attending physician selected by the employer sometimes violated this confidence and disclosed matters at the hearing which should not have been disclosed? Is it not a fact that sometimes at hearings we find the physician and surgeon who has been attending the applicant sit right beside the insurance adjuster or attorney for the respondent giving him advice, coaching him, and telling him what the applicant had told him? Is it any wonder that the employe who is injured becomes reluctant in accepting the physician and surgeon tendered to him by the employer?

Let us take the second; does the employer's physician and surgeon in fact restrict the period of disability and require him to return to work prematurely? I dare say, that quite a number of the contests over compensation matters before the commission are either directly or indirectly attributable to the fact that the attending physician and surgeon sends the man back to work too soon Admitting that, in the opinion of the doctor, the man recovered sufficiently to be able to do light work, not enough effort, however, is made to convince him of that fact. I think that the attending physician and surgeon should not merely send a man back to light work, but should also convince him of the fact that he is able to work. A little nursing and encouragement at this time will go a long ways in avoiding unnecessary contests.

Cases have been brought before the commission where the attending physician and surgeon in an endeavor to reduce the amount of compensation in finger amputations has not taken off enough in order to give the finger a good pad and in some cases second operations were deemed necessary and ordered by the commission.

Now let us take the third argument which is advanced for a change. I wonder if it is not a fact that in some of the contests over compensation matters before the commission the attending physician and surgeon who has been selected by the respondent, who has been paid by the respondent for his service and expects to be called in other cases, does not frequently become a partisan at the proceedings. As I have stated before, the attending physician sometimes occupies a place beside the insurance adjuster or attorney for the respondent giving advice and disclosing facts that probably ought not to be disclosed. I wonder if it is fair to do that? I wonder if physicians and surgeons in industrial practice have not disclosed confidences at these hearings which were personal and should not have been told. I wonder if the in-

dustrial surgeon has not by his conduct supplied some of these arguments that are now being advanced for a change. The demand for a change in this state is so insistent that, in all probability, a system which provides that the respondent should give to the applicant a choice of three, four or five physicians and surgeons, will be adopted. If it is adopted, let us hope that the system will prove so successful and satisfactory that there will be no further demand for absolute choice of a physician and surgeon by the employe.

An absolute choice of a physician and surgeon on part of the employe is liable to be detrimental rather than beneficial to the injured employe. One of the first results would be that the Industrial Commission would have to fix schedules of fees for the medical profession. In states where the employe has his choice, fee schedules have been adopted by the commissions. These schedules have brought energetic protests from the medical profession and probably rightfully so. In one of the states, I think Ohio, the limit for a major operation is $50. If the fees fixed by the commission are too low and they usually are, it will drive from this work the better class of physicians and surgeons and give the employe poorer and inadequate treatment.

While I am discussing this subject of fees, let me state to you the rule that should govern fees in compensation cases. Such fees as prevail in the same community for similar treatment of injured persons of like standards of living when such treatment is paid for by the injured person is a safe rule to govern the fixing of fees. Under the old system, almost invariably, unless paid by the employer, the injured person was treated as a charity patient. Under the compensation act the fees are guaranteed to the profession. They are paid by the employer or insurance carrier. The physician and surgeon does not need to work gratuitously and a physician and surgeon in industrial cases has no right to pad his fee just because an employer or an insurance carrier is paying. We have had some experience in this state with padded fees.

Physicians and surgeons have presented statements for $150 to $200 for an operation for an inguinal hernia, where the usual charge of the industrial surgeon is from $50 to $100. We are now considering the reasonableness of a medical fee where the doctor charges $3 for office calls and $5 for taking the patient home in his car. There is a reason why medical and surgical expenses in industrial cases should be kept down to a minimum. The greater the expense for medical and surgical attendance in industrial cases, the higher the insurance rates and all this is reflected in the ultimate cost of the product to the consumer.

Off and on there has been agitation for the appointment of a medical advisor to the Industrial Commission. Thus far, the Wisconsin Commission is one of the few that has not appointed a medical advisor. At present the Industrial Commission gets its advice from the profession at large and, I believe that is the better plan. I do not believe that the right to decide compensation cases should be left to the opinion of one medical advisor. I expressed myself on this question at a conference of the Industrial Accident Commission at Madison some two years ago and, believe me, it stirred up some discussion. I am still of the same opinion, still opposed to the commission practically surrendering its duty to decide compensation cases to a medical advisor.

Now just a word or two on the matter of estimating percentages of permanent disability under our schedule. To my mind the question of arriving at a percentage of disability to a hand, arm, or foot, is not a medical question. It is a judicial and administrative question. If the commission is given the facts as to what is wrong with a finger, hand, arm, or foot, giving the range of motion at the different joints, it is as well able to judge the amount of permanent disability as a doctor. The commission, of course, welcomes the opinions of doctors on the amount of permanent disability, but it cannot surrender the right to decide what that amount should be to a medical expert or to the independent physician and surgeon appointed by it. The duty belongs to the commission.

Estimates of doctors on the amount of permanent partial disability have been of great help to the commission, but they have many times confused rather than assisted the commission in deciding a case. Let me illustrate a few cases which I have picked up at random.

In the Allen case the estimates of the physician testifying for the applicant was 90% loss of use of foot at the ankle, while that of the physician testifying for the respondent was 30% loss of use

of the foot at the ankle. In the Lavin case the testimony of the applicant's physician was 75% to 85% loss of use of the arm at the elbow and that of the respondent's physician, 10% loss of use of the arm at the elbow. In the Rakas case the applicant's physician estimated the disability at 50% loss of use of the hand at the wrist and the respondent's physician, 5% loss of use of the hand at the wrist.

To my personal knowledge, I recall a case where a man had ankylosis of the second joint of the index finger and a licensed physician and surgeon in Wisconsin testified that because of that disability the man's hand was no good and might just as well be cut off. It is such extravagant estimates on both sides that confuse rather than assist the commission in arriving at a correct conclusion.

Let me give you another illustration. A man has an injury to the shoulder; he fully recovers the function of his arm with the exception that he cannot elevate it above the horizontal. Just because he has lost 50% abduction of the arm does not necessarily mean that he has a disability to the arm of 50%. Most of the work that a man does is done below the shoulder line. It is only in a very small percentage of the work that a man has to raise his arm over his head. The disability, therefore, cannot be 50%, but must be regarded as much less than 50%.

Finally, I wish to impress upon your minds with all the vigor I possess that a compensation hearing before an examiner or a commissioner is not a trial. It is simply a proceeding for the purpose of adjusting the claim. It is not a trial between the applicant and respondent, but a mere investigation into the facts. The less formality of court procedure in a compensation hearing, the better. We try to make these hearings as informal as possible in order to disassociate the minds of the contestants of the idea that they are on trial in a court with counsel and experts lined up on each side.

We do not want biased testimony, expert or otherwise, on either side. We want to know what is wrong with the applicant. We want the plain, untarnished facts in the case. Extravagant estimates rather injure the applicant's or respondent's case. Extravagant estimates of disabilities on the part of a physician called by the applicant, rather prejudice the applicant's case than help it. We do not want any biased testimony of the doctor for the applicant who expects pay for his testifying on a percentage basis. Several such cases have come to the notice of the commission recently. The commission looks as well with suspicion on the opinion of the respondent's physician, who in order to save a few weeks of compensation indemnity puts the disability at the ankle, rather than at the knee, or at the wrist rather than at the elbow. In looking over some of these cases the discrepancies in the opinions of the experts are so great and the estimates so palpably extravagant on both sides that it probably would be better if neither side had offered expert testimony.

Now, doctors, I have probably spoken too frankly, too plainly. I have in a disconnected manner presented a few things that have come under my observation during the past four years. Do not treat my statements as a criticism, generally, for they are not. On the whole, I think I speak the sentiment of the Wisconsin Commission, when I say that we have had good co-operation on the part of the physicians and surgeons who major in industrial medicine and surgery. May we not avoid some of these criticisms for the betterment of the service to the employers and employes of Wisconsin? May we not expect better co-operation in the future so as to be better able to give the employers, employes, and insurance carriers a square deal?

"WAR" NEUROSIS AND ALLIED CONDITIONS MANIFEST IN EX-SERVICE MEN.

The psychoneuroses met with in the U. S. Public Health Service hospitals, G. H. Benton, Waukesha, Wis. (*Journal A. M. A.*, July 30, 1921) claims, are more the neuroses of ex-service men than they are the neuroses of war, and as such their symptomatology is becoming progressively more like that of the civilian neuroses. In grouping the neuroses of ex-service men, the common nomenclature for the psychoneuroses has been adhered to and, when various elements with a war coloring have occurred, they have been added as admixtures or concomitants of the symptom-composite. The latter include the therapeutically stubborn pension neurosis, and that even more unyielding psychic syndrome seen in ex-service men of foreign birth and characterized by a parasitic incapacity born of the patient's unalterable opinion that the discharge of his patriotic duties merits governmental benevolence for the rest of his days. The therapeutic management of the neuroses of ex-service men is beset by many problems. In the solution of these problems, many difficulties are encountered; but a fair proportion of favorable results are being obtained.

WOMEN IN SCIENCE AND MEDICINE

The doors of opportunity have been thrown open to women in many fields in recent years. According to the statistics presented in the Educational Number of THE JOURNAL,[1] there were 879 women studying medicine last year. This number represents nearly 6 per cent of all medical students, the largest proportion recorded in many years. With the barriers largely removed which formerly made the progress of women toward the goal of medical practice difficult, some of the obstacles remain which prejudice and tradition still present. One occasionally hears the statement that women are not "adapted" by nature for a career in science. Vague generalities of this sort can scarcely be regarded as constituting a serious arraignment of any group of persons. There may be factors in the present-day life women which tend to divert their activities from the domain of serious endeavor in the world of science; but there is no real justification for the offhand conclusion that some feminine unfitness precludes success for women either in medicine or in comparable departments of activity. Flexner[2] has given expression to a sane view in advising the students at Bryn Mawr College that there is no line of demarcation between the sciences which men, on the one hand, and women, on the other, should choose as a career. With women as with men, he adds, what should count are taste and aptitude and opportunity. There are various circumstances, partly environmental, partly hereditary, that may help to determine the path which a young man or young women preferably enters. However, at this season, when our professional schools are beginning their year's work, it is well to emphasize what many untutored persons fail to appreciate, namely, that discoveries in science do not result from mere accident. As Flexner has well expressed it, whether the investigator moves in the lower or the upper realm of experiment and observation, there are demanded as a minimum, knowledge of fact and familiarity with method, with which not even the most fortunately circumstanced are naturally endowed. Surely there is nothing in this irreducible minimum which cannot be—or has at times been attained by women. Hospital experience and other routine medical practice inevitably furnish many opportunities for great discoveries in the science of medicine. America will do its share in realizing these only if it can produce generations of men and women alike equipped with what Pasteur called the "prepared mind." A vivid imagination and keen insight are blessings beyond measure; but foremost is the fundament of a "knowledge of fact and familiarity with method." This is the primary requisite of a trained intelligence and trained senses.—*Jour. A. M. A.* Sept. 10, 1921

[1]J. A. M. A. 74:1104 (April 17) 1920.
[2]This issue, page 881.
[1]Holmes, P. K.: Science 54:158 (Aug. 19) 1921.
[1]J. A. M. A. 77:531 (Aug. 13) 1921.
[2]Plexner, Simon: The Scientific Career for Women, Sc. Month. 13:97 (Aug.) 1921.

UNRECOGNIZED INFECTIONS IN PRODUCTION OF CARRIERS OF PATHEOGENIC ORGANISMS

CHARLES F. CRAIG, Washington, D. C. (*Journal A. M. A.*, Sept. 10, 1921), deals with the subject of the contact carrier, the one who has been in contact with the patient and who presents no appreciable symptoms of disease. While it is generally believed that contact carriers have never suffered from the diseases due to the parasites they are carrying, Craig calls attention to the fact that a very considerable proportion of them have presented, at one time or another, symtoms which were undoubtedly due to the parasite they carry. While there is no question that many individuals who have never shown any appreciable symtoms of infection become carriers of pathogenic organisms, it is equally true that many so-called contact carriers have, in reality suffered from symptoms of infection and are, in effect, convalescent carriers rather than contact carriers of the specific parasite. This class of carriers originates from unrecognized cases of contagious or infectious disease, cases in which the symptoms of the infection were so slight or atypical as to mislead the physician, or cases that have caused the patient so little inconvenience that medical advice was not sought. A considerable proportion of contact carriers belong to this category, and the recognition of this fact is of value to the physician, as it should lead him to a more careful consideration of apparently trivial symptoms and to greater utilization of laboratory aids in the diagnosis of their cause. Craig urges more frequent employment of blood cultures and microscopic examinations of the blood in cases of undetermined fevers; of throat cultures in the apparently mild inflammations of the throat and nose; and of microscopic examination of the feces in patients suffering from diarrhea and other intestinal symptoms, to detect these infections and prevent their spread.

THE ILIOSACRAL JOINT

H. R. ALLEN, Indianapolis (*Journal A. M. A.*, Sept. 10, 1921), suggests that the entire pelvis be shown on each picture; then study the pubes where the long indicators of iliosacral displacements may be recorded on a magnified scale. The picture should be taken with reference to bringing out lack of pubic symmetry. To demonstrate the result of pelvic girdle strain, have the patient stand on one leg for one picture and on the other leg for the other picture. By grasping the crest of the ilium or the pubes or the ischial tuberosity on each side of the body, an opportunity is afforded to exert compression or traction or rotation as an aid to other manipulations in the reduction of fractures, as well as in the reduction of dislocations. Through the rectum, a firm grip can be taken on the lower end of the sacrum. By properly employing the manipulation just mentioned for expanding and maneuvering the segments of the pelvic girdle, we may simplify the reduction of difficult cases and avoid some open operations.

PREVENTION AND TREATMENT OF VENEREAL DISEASES.

England has considered the question of venereal diseases for many years. The results obtained by the Ministry of Health through these years of experience warrant the continuance of such activities. A recent circular of the ministry, addressed to local authorities urges the continuance of these principles. The educational, legal, recreational, and medical measures must go on.

In the medical field, various problems have arisen, particularly during and since the war. In a few areas, ablution or disinfecting centers have been instituted to provide for the disinfection by skilled attendants, of persons who have exposed themselves to the risk of infection. In England during the war, an Interdepartmental Committee appointed by the Minister of Health came to the conclusion that although certain drugs if skilfully applied can prevent venereal disease, the prophylactic packet and the instruction of men as to its use did not produce such a general reduction as to warrant its recommendation by the government. It was found, however, that when preventive treatment was provided by a skilfull attendant, the results were better. A Special Committee of the National Birthrate Commission of Great Britian unofficially took up the question and came to the same conclusion.

The question which confronts the British government is that there is no unanimity of opinion on the medical side as to the practicability of self-disinfection for civilian population, whereas on the moral and social sides there are most weighty objections advanced against it. This question is one in which the moral and social considerations, as well as the medical, are important. In the circumstances the British government has decided that it cannot give official support to self-disinfection as a policy.. The Ministry of Health is of the opinion, however, that the arguments which have influenced the British government in deciding against this measure, do not apply to the provision of ablution centers. Final conclusions as to the value of such centers cannot be drawn, but experience thus far, warrants the continuance of the experiment.

THE EXPENSIVE "POOR MAN'S MEDICINE"

A favorite argument of the nostrum exploiters, advanced when threatened with restrictive legislation or taxation, is that "patent medicines" are "the poor man's medicine." Never had a pretension a flimsier basis of fact. But a certain portion of the public can be counted on to accept as gospel any preposterous statement if only it be repeated often enough and in sufficiently black type. The purchaser who buys a bottle of Dr. Quack's Quick Cure does not realize that about 75 cents of his dollar has been expended by Dr. Quack in an effort to convince him that he is suffering from something for which "Quick Cure" is a sure-shot remedy. The most expensive thing about a "patent medicine" is the advertising. As one "patent medicine" maker said, when, in a burst of candor, he was speaking before others of his kind:

"The twenty thousand newspapers of the United States make more money from advertising the proprietary medicines than do the proprietors of the medicines themselves.....Of their receipts, one-third to one-half goes for advertising."

If, on the admission of the manufacturers, from 33 cents to 50 cents of a dollar paid for a "patent medicine" goes to the newspapers, the additional cost of exploitation in "almanacs," window displays, circulars and other publicity features can easily be counted on to bring the amount up to 75 cents. And the farce—or tragedy—of the whole thing is that John Doe pays this 75 cents—unconsciously—for the purpose of being persuaded that he is suffering from some ailment for which the nostrum is recommended. Every physician and every druggist knows that the present "patent medicine" is unnecessary. He knows that there are already in existence official products more than ample to fill every legitimate need of self-drugging, that is, to furnish all the "home remedies" that can safely be used by the public. These official products being non-secret, and their strength and purity being guaranteed under federal and state laws, they are in every way superior to the proprietary article of secret composition. Moreover, there being no element of monopoly or proprietorship, in the narrow sense, in the manufacture of these official products, competition may be counted on to keep the price down to a reasonable figure. The small margin of profit on the sale of official products makes it impossible for such preparations to be sold by intensive advertising methods, and their open formula makes false and fraudulent therapeutic claims unfeasible. The abolition of "patent medicine" advertising would do much to abolish the making of hypochondriacs by suggestion and would result in a great decrease in all drug taking. In addition to this large indirect financial saving there would be a direct saving in that when John Doe purchased a simple home remedy he would pay only for the actual cost of the medicine plus a small legitimate "overhead" to cover production and distribution. It is a demonstrable fact that if the public depended upon a few of the official products for their home remedies instead of on the multitudinous "patent medicines," they could save 75 cents on every dollar now expended. "Poor Man's Medicine" forsooth!—*Jour. A. M. A., Sept. 10, 1921.*

BLOOD SUGAR AND BASAL METABOLISM FINDINGS IN CHRONIC PULMONARY TUBERCULOSIS AND HYPERTHYROIDISM

R. A. McBrayer, Sanatorium, N. C., (*Journal A. M. A.*, Sept. 10, 1921), reports the results of studies that the laboratories of the North Carolina State Sanitorium have been pursuing during the current year on the differential diagnosis of incipient pulmonary tuberculosis and incipient hyperthyroidism. The studies have been made on twenty-three incipient, seventeen moderately advanced and four far advanced cases, along with six known nontuberculous persons. The conclusion reached as a result of these studies was that the determinations of basal metabolic rate and blood sugar are of no practical value in the differential dignosis of chronic pulmonary tuberculosis and hyperthyroidism.

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SOCIETY PROCEEDINGS

ASHLAND-BAYFIELD-IRON COUNTY

At a meeting of the Ashland-Bayfield-Iron County Medical Society held at the Elks' Club House, Ashland, August 26, Dr. A. N. Hedges of Ridgeway told his experiences in Serbia while serving there with the Red Cross. Dr. A. O. Shaw also described his trip through China, Japan and the Philippines.

BARRON-P.-W.-S.-B. COUNTY

The members of the Barron-Polk-Washburn-Sawyer-Burnett County Medical Society enjoyed the best meeting ever held, September 6, 1921, at Amery, Wisconsin. The following program was presented: "Disease of the Gall-bladder," Dr. Geo. B. Eusterman, Rochester, Minnesota; "Poliomyelitis," by Dr. W. H. Hengstler, St. Paul, Minnesota, and "Fractures of the Shaft of the Femur," by Dr. H. B. Crommett of Amery, Wisconsin.

BROWN-KEWAUNEE COUNTY

The members of the Brown-Kewaunee County Medical Society honored two veterans of the profession at a meeting held at Stangelville, August 23. The guests of honor were Dr. B. C. Brett, Green Bay, and Dr. A. M. Kersten, De Pere, who celebrated their 88th and 75th birthdays, respectively. About forty members attended, a chicken dinner being served at Konop's Hotel at six o'clock. Time was given up to entertainment for the two guests.

GRANT COUNTY

The regular meeting of the Grant County Medical Society was held at the Country Club, Lancaster, Wednesday afternoon, September 14. The following program was presented: papers by Dr. J. H. Fowler, Lancaster, on "Addison's Disease," "Roentgen Diagnosis," by Dr. J. A. Jackson, Madison, "Vertigo," by Dr. E. H. Brooks, Appleton, and "The Surgical Treatment of Empyema Complicating Pneumonia," by Dr. Wilson Cunningham, Platteville. Dr. E. H. Spiegelberg of Boscobel gave a report on the meeting of the state society at Milwaukee.

M. B. Glasier, *M. D., Secretary.*

MONROE COUNTY

A meeting of the Monroe County Medical Society was held at the State Public School, Sparta, September 16. Dr. Otto H. Foerster, Milwaukee, conducted an interesting skin clinic in the afternoon and gave a lecture in the evening on "Diagnosis and Treatment of Some of the More Common Diseases of the Skin," illustrated with lantern slides. This lecture was given under the auspices of the University Extension Division.

WALWORTH COUNTY

The Walworth County Medical Society held its regular monthly meeting at the Hotel Fernwood, Williams Bay, September 22. This was a picnic meeting and during the afternoon the physicians present visited Yerkes Observatory.

ASSOCIATION NEWS

TRI-STATE DISTRICT MEDICAL SOCIETY.

The Tri-State District Medical Society extends a hearty invitation to the physicians of Wisconsin to attend it's annual assembly which is to be held at Milwaukee, Wisconsin, November 14th, 15th, 16th and 17th. The following is a partial list of the members of the profession who have accepted places on the tentative program:

Dr. George Armstrong, Prof. of Surgery, Faculty, McGill University, Montreal, Quebec.

Dr. Edward William Archibald, Prof. of Clinical Surgery, Faculty of Medicine, McGill University, Montreal, Quebec.

Commander William Seaman Bainbridge, United States Navy, Medical Department, New York, N. Y.

Dr. Arthur Dean Bevan, Prof. of Surgery, and Head of Surgical Department, Rush Medical College, Chicago, Illinois.

Dr. Hugh Cabot, Dean & Prof. of Surgery, University of Michigan, Medical School, Ann Arbor, Michigan.

Dr. Henry A. Christian, Hersey Prof. of the Theory and Practice of Physic, Harvard University, School of Medicine, Boston, Mass.

Dr. John G. Clark, Prof. of Gynecology, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

Dr. Charles P. Emerson, Dean & Prof. of Medicine, Indiana University, School of Medicine, Indianapolis, Ind.

Captain A. M. Fauntleroy, M. C., U. S. Navy, U. S. Naval Hospital, New York City.

Dr. Charles H. Frazier, Prof. of Neurosurgery, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

Dr. J. Claxton Gittings, Prof. of Pediatrics, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

Dr. William P. Graves, Prof. of Gynecology, Harvard University, School of Medicine, Boston, Mass.

Dr. Warfield T. Longcope, Bard Prof. of the Practice of Medicine, Columbia University, College of Physicians & Surgeons, New York, N. Y.

Dr. John P. Lord, Prof. of Orthopedic Surgery, University of Nebraska, School of Medicine, Omaha, Nebr.

Dr. Willis F. Manges, Prof. of Roentgenology, Jefferson Medical College, Philadelphia, Pa.

Dr. William J. Mayo, Mayo Clinic, Rochester, Minnesota.

Dr. Thomas McCrae, Prof. of Medicine, Jefferson Medical College, Philadelphia, Pa.

Dr. Reginald H. Sayre, Prof. of Orthopedic Surgery, University & Bellevue Hospital Medical College, New York, N. Y.

Dr. Alfred Stengel, Prof. of Medicine, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

Dr. J. Bentley Squier, Prof. of Urology, Columbia University, College of Physicians & Surgeons, New York, N. Y.

Dr. Frederick Tice, Prof. of Clinical Medicine, University of Illinois, College of Medicine, Chicago, Illinois.

Dr. Henry Enos Tuley, Dean & Prof. of Pediatrics, University of Louisville, School of Medicine, Louisville, Ky.

Dr. H. C. Jacoboeus, Stockholm, Sweden.

Dr. Joseph Pettit, Portland, Oregon.

Besides the contributions in form of essays and addresses, a large portion of the time will be devoted to the diagnostic clinic and an abundance of material is being arranged by the Milwaukee physicians for the clinics. The Association will be the guest of the Milwaukee County Medical Society which is heartily cooperating in making the meeting of great benefit to the physicians who will attend.

Doctors, make your arrangements now to attend the assembly, which offers four full days of post-graduate work. Bring your ladies with you. A fine program is being arranged for their entertainment. The program in full will appear in a later number of this Journal.

Program Committee.

Dr. Horace M. Brown, Milwaukee, Wisconsin.

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HOSPITAL SURVEY OF WISCONSIN.

We are reprinting herewith the hospital survey of Wisconsin as presented by the Council on Medical Education and Hospitals of the American Medical Association at the last annual meeting. "General Hospitals" includes medical, surgical, maternity, orthopedic, tuberculosis and contagious disease institutions. Hospitals marked with an asterisk are approved for the training of interns as general hospitals, those marked with a dagger as special hospitals.

	Total Beds	Av. Beds In Use
Appleton 19,561—Outagamie		
St. Elizabeth's Hospital	70	68
Ashland, 11,334—Ashland		
Ashland General Hospital	35	26
St. Anthony's Hospital	30	...
St. Joseph's Hospital*	200	75
Bayfield, 1,441—Bayfield		
Purcair (T.B.)	35	(New)
Beloit, 21,284—Rock		
Beloit General Hospital	30	20
Beloit Hospital	50	20
Chippewa Falls, 9,130—Chippewa		
St. Joseph' Hospital	160	130

Square miles per hospital, 428; population per hospital bed, 348; percentage of beds occupied, 66; percentage of counties without hospitals, 36.6.

	Total Beds	Av. Beds In Use
Dodgeville, 1,791—Iowa		
St. Joseph's Hospital	51	25
Eau Claire, 20,880—Eau Claire		
Luther Hospital	115	87
Mt. Washington Sanat. (T.B.)	40	34
Sacred Heart Hospital	150	125
Fond du Lac, 23,427—Fond du Lac		
St. Agnes Hospital*	150	100
Green Bay, 31,017—Brown		
St. Mary's Hospital	100	65
St. Vincent's Hospital	200	190
Wisconsin Deaconess Hospital	50	45
Kenosha, 40,472—Kenosha		
Kenosha Hospital	75	53
St. Catherine's Hospital and Sanitarium	100	70
La Crosse, 30,363—La Crosse		
La Crosse Lutheran Hospital*	106	70
La Crosse Public Hospital	50	...
St. Francis Hospital*	210	120
Little Chute, 2,017—Outagamie		
Riverview Sanatorium (T.B.)	32	28
Madison, 38,378—Dane		
Madison General Hospital	115	79
Madison Sanitarium	50	34
St. Mary's Hospital*	65	49
Manitowoc, 17,563—Manitowoc		
Holy Family Hospital	65	...
Marinette, 13,610—Marinette		
Marinette and Menominee Hospital Company	45	...

	Total Beds	Av. Beds In Use
Marshfield—7,394—Wood		
St. Joseph's Hospital*	180	90
Merrill, 8,068—Lincoln		
Ravn Hospital	25	...
Milwaukee, 457,147—Milwaukee		
Columbia Hospital*	85	56
Evangelical Deaconess Hospital	51	42
Hanover General Hospital	70	50
Johnson Emergency Hospital	40	15
Milwaukee Children's Hospital†	60	54
Milwaukee Hospital*	162	102
Milwaukee Infants Hospital	50	30
Milwaukee Maternity and General Hospital	80	52
Misericordia Hospital	50	...
Mt. Sinai Hospital*	100	85
Riverside Sanitarium	50	...
Sacred Heart Sanitarium	100	...
Social Workers Tuberculosis Sanatorium	26	...
South View Municipal Hospital	187	85
St. Joseph's Hospital*	134	125
St. Mary's Hospital	190	136
St. Vincent's Infant Asylum and Maternity Hospital	175	...
Trinity Hospital†	155	110
Monroe, 4,788—Green		
Evangelical Deaconess Hospital	32	20
Neenah, 7,171—Winnebago		
Theda Clark Memorial Hospital	35	33
Oconomowoc, 3,301—Waukesha		
Waldheim Park Sanatorium	75	50
Onalaska, 1,066—La Crosse		
Oak Forest Sanatarium (T.B.)	40	30
Oshkosh, 33,162—Winnebago		
St. Mary's and Mercy Hospital†	140	80
Platteville, 4,353—Grant		
Wilson Cunningham Hospital	30	22
Plymouth, 3,415—Sheboygan		
Plymouth Hospital	25	...
Portage, 5,582—Columbia		
St. Saviors General Hospital	27	22
Prairie du Chien, 3,537—Crawford		
Prairie du Chien Sanitarium and Hostal	75	50
Racine, 58,593—Racine		
St. Luke's Hospital	90	75
St. Mary's Hospital	80	75
Sunnyrest Sanitarium (T.B.)	37	...
Rhinelander, 6,654—Oneida		
St Mary's Hospital	35	12
Rice Lake, 4,457—Barron		
Lakeside Methodist Hospital	27	(New)
Sheboygan, 30,955—Sheboygan		
St. Nicholas Hospital	100	100
Sparta, 4,466—Monroe		
St. Mary's Hospital	100	40
Stevens Point, 11,371—Portage		
River Pines Sanatorium (T .B.)	44	40
St. Michael's Hospital	35	25
Sturgeon Bay, 4,553—Door		
Egeland Hospital	25	18
Superior, 39,624—Douglas		
Isolation Hospital	26	...
St. Francis Hospital	75	...
St. Mary's Hospital	150	100
Tomahawk, 2,801—Lincoln		
Sacred Heart Hospital	60	24
Watertown, 9,299—Jefferson		
St. Mary's Hospital	45	35
Waukesha, 12,558—Waukesha		
The Spa	80	...
Wausau, 18,661—Marathon		
Mount View, Marathon County Sanatorium (T.B.)	50	38
St Mary's Hospital	52	40
Wausau Hospital	25	20
Wauwatosa, 5,818—Milwaukee		
Blue Mound Sana. (T.B.)	100	85
Milwaukee County Hospital*	300	249
Muirdale Sanatorium for the Treatment of Tuberculosis	350	320
West De Pere[12]—Brown		
Hickory Grove Sanat. (T.B.)	40	36
Whitelaw, 275—Manitowoc		
Maple Creek Sanat. (T.B.)	36	23
Wisconsin Rapids, 6,521—Wood		
Riverview Hospital	30	20
Forty-Eight General Hospitals of less than 25 beds	746	185
Totals	7,570	4,124

In Wisconsin the following twenty-six counties have no hospitals: Adams, Buffalo, Burnett, Clark, Florence, Green Lake, Iron, Jackson, Kewaunee, Lafayette, Marquette, Oconto, Ozaukee, Pepin, Pierce, Richland, Rusk, Saint Croix, Taylor, Trempealeau, Vernon, Vilas, Washburn, Washington, Waupaca, Washara.

[12]Small village, postoffce is De Pere.

NATIONAL BOARD OF MEDICAL EXAMINERS.

The National Board of Medical Examiners has just completed the first five years work and with it the trial period of its usefulness. The principle which this Board has stood for, namely, the establishment of a thorough test of fitness to practice medicine which might safely be accepted throughout this country and abroad, has been widely accepted. Since this Board was organized by Dr. W. L. Rodman in 1915, eleven examinations have been held. These examinations have been conducted on the plan of holding at one sitting, a written, practical and clinical test for candidates with certain qualifications, namely a four-year high-school course, two years of college work, including one year of Physics, Chemistry, and Biology, graduation from a Class A Medical School and one year's internship in an

that the Board has now adopted and will put into effect at once, the following plan: Part I, to consist of a written examination in the six fundamental medical sciences: Anatomy, including histology and embryology; Physiology; Physiological Chemistry; General Pathology; Bacteriology; Materia Medica and Pharmacology. Part II, to consist of a written examination in the four following subjects: Medicine, including pediatrics, neuropsychiatry, and therapeutics; Surgery, including applied anatomy, surgical pathology and surgical specialties; Obstetrics and Gynecology; Public Health, including hygiene and medical jurisprudence. Part III, to consist of a practical examination in each of the following four subjects; Clinical Medicine, including medical pathology, applied physiology, clinical chemistry, clinical microscopy and dermatology; Clinical Surgery, including applied anatomy, surgical pathology, operative surgery, and the surgical specialties of the diseases of the eye, ear, nose and throat; Obstetrics and Gynecology; Public Health, including sanitary bacteriology and the communicable diseases.

Parts I and II will be conducted as written examinations in Class A Medical Schools and Part III will be entirely practical and clinical. In order to facilitate the carrying out of Part III, subsidiary boards will be appointed in the following cities: Boston, New York, Philadelphia, Minneapolis, Iowa City, San Francisco, Denver, New Orleans, Baltimore, Galveston, Cleveland, St. Louis, Chicago, Washington, D. C., and Nashville, and these boards will function under the direction of the National Board. The fee of $25.00 for the first part, $25.00 for the second part and $50.00 for the third part will be charged. In order to help the Board the Carne-acceptable hospital. These examinations have covered all the subjects of the medical school curriculum and have been conducted by members of the Board which members of the profession resident in the place of examination appointed to help them. Such examinations have been held in Washington, Philadelphia, New York City, Boston, Chicago, St. Louis, Rochester (Minnesota) Minneapolis. During the war a combined examination was held at Fort Oglethorpe and Fort Riley. There have been 325 candidates examined, of whom 269 have passed and been granted certificates.

Starting with the endorsement of the Council on Medical Education of the American Medical Association, American Medical College Association and various sectional Medical Societies, the recognition of the Army, Navy and Public Health Service Medical Corps of the United States and certain State Boards of Medical Examiners, the certificate is now recognized. Also by twenty states as follows: Alabama, Arizona, Colorado, Delaware, Florida, Georgia, Idaho, Iowa, Kentucky, Maryland, Minnesota, Nebraska, New Hampshire, New Jersey, North Carolina, North Dakota, Pennsylvania, Rhode Island, Vermont and Virginia, the Conjoint Board of England, the Triple Qualification Board of Scotland, the American College of Surgeons and the Mayo Foundation of the University of Minnesota.

There has been such a wide-spread demand for an opportunity to secure this Certificate by examination, gie Foundation has appropriated $100,000.00 over a period of five years.

At the Annual Meeting held June 13th, of this year in Boston, the following officers were elected, M. W. Ireland, Surgeon General, President; J. S. Rodman, M. D., Secretary-Treasurer, E. S. Elwood, Managing Director.

Mr. Elwood will personally visit all Class A Schools during the college year to further explain the examination, etc., to those interested. Further information may be had from the Secretary-Treasurer, Medical Arts Building, Philadelphia.

NEWS ITEMS AND PERSONALS

Dr. and Mrs. D. J. Twohig, Fond du Lac, and Dr. and Mrs. R. G. Raymond, Brownsville, recently returned home after an extended trip through the West and Canada.

A new $5,000 medical dispensary will soon be erected at the Cudahy Brothers Packing Company, Cudahy, Wisconsin, as a wedding gift of the President, Michael F. Cudahy, to his employees.

The physicians of Rock County are making ready for the largest clinic ever held in the county, to be held at Mercy Hospital, Janesville, October 12 and 13.

Dr. E. J. Bredell of Chicago has located in Wausau.

Beaver Dam is to have a new modern thirty bed hospital which will be under the management of the Lutheran Deaconess Association of Fort Wayne, Indiana. Committees have been appointed and the drive for funds has been started.

Dr. G. H. Smith of Hortonville has disposed of his home there and expects to leave for Tacoma, Washington, soon.

Dr. C. W. Munger, Milwaukee, has resigned as superintendent of Columbia Hospital and expects to leave soon to take charge of the Blodgett Memorial Hospital at Grand Rapids, Michigan.

Miss Marian Rottman, superintendent of Emergency Hospital, Milwaukee, has been granted a nine months' leave of absence which started September 15. Miss Rottman expects to take up a course in administration at Columbia University. Miss Minnie Getts, senior nurse, has been appointed superintendent pending Miss Rottman's return.

The cornerstone of the Sheboygan Clinic building was laid by the president, Dr. Wm. H. Gunther, Sheboygan, August 29, during which ceremony Dr. Gunther dedicated the building to a life of usefulness, advancement of science and alleviation of suffering. The building will be ready for occupancy February first.

Dr. F. E. Tryon has moved from Merrimac and located

at Baraboo where he will be associated with Dr. F. B. Farnsworth.

The summer class of public health nurses of the Wisconsin Anti-Tuberculosis Association graduated August 26, Dr. C. A. Harper of Madison delivered the commencement address and Dr. Hoyt E. Dearholt, Milwaukee, presented the diplomas. The fall course of the health training school opened September 8.

Dr. H. R. Blay, formerly with the Janesville Sanitarium at South Janesville, has opened offices in Janesville.

Dr. James J. Swendson, formerly of Amherst, has located in Appleton where he has entered into partnership with Dr. V. F. Marshall.

Advices from Dr. A. J. Pullen, North Fond du Lac, who is traveling abroad, state that he was present at the unveiling of a monument to the A. E. F. forces at Flirey, France, August 21st.

The State Board of Health has appointed Dr. V. A. Gudex, Eau Claire, as deputy state health officer of the fourth district, and Dr. Louis Dorpat, Rhinelander, and Dr. I. F. Thompson, Madison, as directors of the state bureau of communicable diseases.

Dr. J. M. Postle, who for the last three years has been associated with Dr. C. C. Urquhart, Hurley, has moved to Ironwood where he will specialize in diseases of the eye, ear, nose and throat.

The new city isolation hospital of Racine will be ready for occupancy October first. This building was erected at a cost of $125,000.

Dr. W. G. Kemper, Manitowoc, has been elected president of the staff of the Holy Family Hospital in that city, Dr. A. M. Farrell as Vice-President, and Dr. W. E. Donohue as secretary-treasurer.

Twenty thousand dollars was raised the first day of the campaign for the Riverview Hospital at Wisconsin Rapids.

Dr. B. C. Brett, Green Bay, celebrated his 88th birthday, Tuesday, August 23. Dr. Brett was born in Strong, Maine, in 1833, and graduated from the Dartmouth Medical College in 1860. He has practiced in Wisconsin ever since, except for three years spent in the medical service during the Civil War.

Dr. C. Midelfart, Eau Claire, embarked from New York, August 19, for Norway. He expects to remain about two months.

Harvard university is to have a school of public health. The new institution has been made possible by a gift of $1,785,000 by the Rockefeller foundation. The new school will provide opportunities for research, will unify existing courses and will offer new or extended teaching facilities in public health administration, vital statistics, bacteriology, medical zoology, physiological hygeine and communicable diseases.

Judge George Grimm of the Rock county circuit court has reversed the findings of a jury which rendered a special verdict in the case of Emma Taylor vs. Dr. John F. Rood, both of Darien. The court denied the plaintiff's motion for judgment against the physician in the sum of $1,800 as recommended by a jury at the last term of the circuit court in Janesville.

Organization of a unit of the Wisconsin National Guards to be known as the Medical Supply Department of the 32nd Division, has been started at Ripon under the leadership of Judge Roy E. Reed, who has been placed in command of the new unit with the rank of captain. The medical corps will furnish medical supplies to all state guard units. There will be eight sergeants and corporals to assist Captain Reed.

Dr. J. W. Kleinboehl is spending the month of September in New York City, visiting some of the prominent urological clinics, and will resume his practice October 1st, 1921, at his offices in the Majestic Bldg., Milwaukee, Wisconsin.

Wisconsin is to have the first medical regiment in the United States army, through the efforts of Adjutant General Orlando Holway. The medical regiment for Wisconsin's national guard will be known as the Sixth Corps Area medical regiment. There will be field hospital companies, sanitary companies, ambulance companies and supply companies. Madison may secure the field hospital company. Col. Gilbert E. Seamen, surgeon general of the Wisconsin national guard is in command of the regiment. Maj. W. F. Lorenz will assist him.

Drs. L. M. Warfield, E. H. Mensing, H. C. Dallwig, A. M. Dorr, C. R. Farnham, W. J. McKillip, C. J. Kenney, B. H. Schlomovitz and G. E. Morgan, D. D. S. announce the opening of offices in the Colby-Abbot Building, Milwaukee.

DEATHS

Dr. E. C. Murphy, Kenosha, died at his home August 25, 1921, of acute pancreatitis, after an illness of five weeks. Dr. Murphy was born in Darlington, Wisconsin, June 1, 1876, and after his graduation from the schools there taught for two years in Iowa. In 1896, he enlisted in the United States Navy, remaining in the service for eight years. He then returned to Wisconsin and entered Marquette University, receiving his degree there in 1914. He practiced medicine for a time in Indiana Harbor, then located in Wilmot where he remained for three years. Dr. Murphy was a member of the Kenosha County, Wisconsin State and American Medical Associations.

Dr. C. D. Conkey, a pioneer resident of Superior, died at his home in Los Angeles, September 8, 1921. Dr. Conkey was a former member of the Douglas County, Wisconsin State and American Medical Associations.

Dr. F. T. Field, Elroy, died at his home June 15, 1921. Dr. Field was born in Albany, New York, in 1853

and graduated from the University of Michigan School of Medicine in 1884. He located in Elroy the same year and practiced there up to the time of his death. He was a member of the Juneau County, Wisconsin State and American Medical Associations.

MARRIAGES

Dr. Charles Grafton Weller, Washington, D. C., formerly of Fond du Lac, Wisconsin, to Miss Esther Curtis, Fond du Lac.

CHOLECYSTOGASTROSTOMY AND THE COURVOISIER GALLBLADDER.

A review of the experimental and clinical evidences found in the literature pertaining to gastrobiliary fistula or cholecystogastrostomy, Charles Gordon Heyd, New York (*Journal A. M. A.*, July 30, 1921) claims, demonstrates not only that the anastomosis is rational but also that it has advantages distinctly superior to any other method of anastomosis of gallbladder to any portion of the gastro-intestinal tract. The advantages of the union of the gallbladder to the stomach may be summarized thus: (1) a close anatomic apposition of the two viscera is easily accomplished; (2) the delivery of bile into the gastro-intestinal tract at an approximately normal point; (3) the facility of visceral mobilization and the ease of technical performance by reason of the fact that the anastomosis is between two viscera of fairly well developed size and thickness; (4) the adequate sterilizing mechanism of the stomach prevents ascending infection together with the known absence of infection in operations on the stomach and gallbladder, and (5) minimal mortality. For performing a cholecystogastrostomy, it is necessary to have a gallbladder with a patulous cystic duct, with relatively normal walls, or not too seriously diseased in order that the gallbladder and cystic duct may properly function as a delivery tube from the common hepatic duct to the stomach. After union of the gallbladder with the stomach, the gallbladder probably contracts and elongates into a small tubular channel. Roentgen-ray studies in cases in which cholecystogastrostomy has been performed showed that bismuth or barium do not enter gallbladder. In functional determination of the gastric acidity after cholecystogastrostomy, the amount of free acid is not less than the normal amount, although there is a varying diminution in the total acidity.

BASAL METABOLISM IN FEVER.

Most of the patients investigated by Eugene F. Du Bois, New York (*Journal A. M. A.*, July 30, 1921) whose metabolism was very high for the degree of temperature were typhoid or malaria patients with a high level of protein metabolism. Most of those with low basal metabolism were tuberculous patients with low protein metabolism. The ingestion of a large protein meal does not increase the heat production in typhoid fever, in which the protein metabolism is already high, but it does cause a striking increase in the case of tuberculosis, in which the protein metabolism is at a much lower level. Out of the total of 137 experiments in various fevers, 82 per cent come within 10 per cent of the average. In other words, the percentage variations in the metabolism for a given temperature are scarcely greater than in a similar group of normal individuals.

FACTORS WHICH INFLUENCE RESULTS AND MORTALITY RATE IN KIDNEY SURGERY

In summarizing the operative and postoperative complications of 263 cases, John P. Caulk, St. Louis (*Journal A. M. A.*, Sept. 10, 1921), states that hemorrhage occurred eleven times; severe in two instances, both of these resulting in death. Seven other hemorrhages occurred following nephrotomy, but were very mild and did not cause the patient any degree of shock. Hemorrhage occurred twice during nephrotomy, first from tearing a small, aberrant vessel at the upper pole, and the second time from the slipping of the pedicle. There has been no injury to the bowel. Shock has occurred nine times, only twice in nephrectomy. The other seven cases of shock occurred in sick children and in the very toxic individuals, most of whom were suffering with pyonephrosis. In many of these individuals, Caulk believed death would have occurred if anything more had been attempted. The fact that shock has occurred but twice in 160 nephrectomies is an illustration of its rarity following clean kidney surgery. These patients almost invariably were up in the wheel chair on the tenth day. The majority of the clean cases left the hospital at the end of two weeks—very few remained in the hospital after three weeks. In classifying the diseases which compose the operative list, there were seventy one operations for stone; of these, 20 per cent. were by nephrectomy; 25.3 per cent., nephrolithotomy; 32.4 per cent., pyelotomy, and 22.3 per cent., combined pyelotomy and nephrolithotomy. There were fifty-six operations on the tuberculous kidney: fourteen for tumor; thirty for movable kidneys with intermittent hydronephrosis; eight large hydronephroses; seventy-nine for kidney infections. that is, pyelonephritis, thirty-eight; pyonephrosis, thirty; perinephritic abscess, eleven; decapphosis; eight large hydronephroses; seventy-nine for kidsulations, five. making a total of 263 operations. There have been five deaths in the 263 cases, a gross mortality of 1.9 per cent.; one patient died of shock following nephrectomy for tumor. The other four deaths occurred following nephrotomies: two for pyonephrosis and two for calculus pyonephrosis and perinephritic abscesses. One is immediately struck with the high mortality in these severe infections. Out of forty-three such operations, there were four deaths, or 9.3 per cent. There was but one death (from tumor) in the remaining 220, or 0.4 per cent. operations. Of 160 nephrectomies there was but one death. In other words, the mortality occurred, where the least surgery was done. This is convincing proof, in Caulks opinion, that if renal infections were investigated earlier and such late complications not allowed, the mortality in kidney surgery should be exceedingly low.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

Die Geschlechtskalte Der Frau. Ein Psychopathologie des Weiblichen Liebeslebens. Von Dr. Wilhelm Stekel, Nurenwartz in Wien. Urban and Schwarzenberg, Berlin. 490 pp. 1921.

Landmarks and Surface Markings of the Human Body. 5th edition. By L. Bathe Rawling, F. R. C. S. 100 pp. 31 illustrations. New York: Paul B. Hoeber. Price, $2.50.

Human Behaviour in Relation to the Study of Educational, Social and Ethical Problems. By Stuart Paton, M. D. New York: Charles Scribner's Sons. 1921. Price, $6.00.

Squint—Its Causes, Pathology and Treatment. By Claud Worth, London. 5th edition. 242 pp. Philadelphia: P. Blakiston's Son & Co. 1921. Price, $3.50.

The Starvation (Allen) Treatment of Diabetes. By Hill and Eckman. 4th edition. Boston: W. M. Leonard & Co.

Physical Diagnosis. By W. D. Rose, M. D., Associate Professor of Medicine, Univ. of Ark. 2nd edition. 309 illustrations. St. Louis: C. V. Mosby Co. 1921.

General Pathology—An Introduction to the Study of Medicine. By Horst Oertel, M. D., Professor of Pathology, McGill Univ. 357 pages, illustrated. New York: Paul B. Hoeber. Price, $5.00.

Operative Surgery. By J. Shelton Horsley, M. D., Attending Surgeon, St. Elizabeth's Hospital, Richmond, Va. 613 ilustrations. St. Louis: C. V. Mosby Co. 1921.

The Practice of Medicine. By Hughes Dayton, M. D., New York. 4th edition, revised. 328 pp. Philadelphia & New York: Lea & Febiger. 1921. Price, $2.25.

The Manner of Man That Kills. By L. Vernon Briggs, M. D., Director of the Massachusetts Society for Mental Hygiene. Boston: Richard G. Badger. 1921.

Functional Diagnosis. By Max Kahn, M. D., in collaboration with Horris H. Kahn, M. D., Jacob Rosenbloom, M. D., and Wm. J. Gies, Ph. D. 400 pp. New York: W. F. Prior, Inc. 1920.

Roentgen Interpretation. By George W. Holmes, M. D., and Howard E. Ruggles, M. D. 2nd edition. 400 pp. 184 illustrations. New York. Lea & Febiger. 1921. Price, $3.25.

Nutrition and Clinical Dietetics. By Herbert S. Carter, M. D., Paul E. Howe, Ph. D., and Howard H. Mason, M. D. 2nd edition. Philadelphia & New York: Lea & Febiger. 1921. Price, $7.50.

Infections of the Hand. By Allen B. Kanavel, M. D. 4th Edition, thoroughly revised. Illustrated. Philadelphia & New York: Lea & Febiger. 1921. Price, $5.50.

Diseases of the Skin. By Oliver S. Ormsby, M. D., Professor of Skin and Venereal Diseases, Rush Medical College. 2nd edition, thoroughly revised. Illustrated. 1166 pp. Philadelphia & New York: Lea & Febiger. 1921. Price, $10.00.

Medical Electricity and Roentgen Rays with a Practical Chapter on Phototherapy. By Sinclair Tousey, M. D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. Third edition. Thoroughly Revised and Greatly Enlarged. Octavo of 1337 pages, 861 illustrations, 16 in colors. Philadelphia and London: W. B. Saunders Company, 1921. Cloth $10.00 net.

Massage and Therapeutic Exercise. By Mary McMillan, Chief Aide, Walter Reed Army Hospital, Washington, D. C., 1918; Supervisor of Aides in Physio-therapy, Medical Corps, U. S. A., Washington, D. C. 1919-1920. 12mo of 274 pages with 74 illustrations. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $2.25 net.

A Text Book of Pathology. By Alfred Stengel, M. D., Sc. D., Professor of Medicine, University of Pennsylvania, and Herbert Fox, M. D., Director of the Pepper Laboratory of Clinical Medicine, University of Pennsylvania. Seventh Edition, Reset. Octavo of 1111 pages, 509 illustrations, many in colors, 15 colored plates. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $8.50 net.

Radiant Energy and the Ophthalmic Lens. By Frederick Booth. Introduction by Whitefield Bowers. 226 pages, 230 illustrations. Philadelphia: P. Blakiston's Son & Co. Price, $2.25 net.

Disturbances of Instincts and Effects. (The Parapathic Diseases.) By Wilhelm Steckel, Wien. 482 pp. Berlin and Wien: Urban and Schwarzenburg. 1920.

Handbook of Clinical Hydro-, Balneo-, and Climato-Therapy. By Alois Strasser, Professor at Wien; Franz Kirsch, Dr. at Wien, and E. Sommer, Professor at Zürich. Part 2, pp. 209-911. 48 illustrations. Berlin and Wien: Urban and Schwarzenberg. 1920.

Tuberculosis and How to Combat It. A book for the Patient. By Francis M. Pottenger. 272 pp. St. Louis: C. V. Mosby Co. 1921. Price, $2.00.

Types of Mental Defectives. By Martin W. Barr, M. D., and E. F. Maloney, A. B. 30 plates containing 188 illustrations. 180 pp. Philadelphia: P. Blakiston's Son & Co. 1921. Price, $3.00.

The Principles of Immunology. By Howard T. Karsten, M. D., and Enrique E. Ecker, Ph. D. Illustrated. Philadelphia and London: J. B. Lippincott Co. 1921. 310 pp. Price, $5.00.

Gynecology. By Brook M. Anspach, M. D., Associate in Gynecology, University of Pa. 750 pp. 526 illustrations. Philadephia and London: J. B. Lippincott Co.

BOOK REVIEWS

Landmarks and Surface Markings of the Human Body. Fifth edition. By L. Bathe Rawling, F. R. C. S. 31 illustrations. Paul B. Hoeber, New York. Price, $2.50.

This little work of 100 pages is an anatomical refer-

ence which will be taken from the book-shelves of almost any practitioner several times a week. Printed first in 1904, it has now exhausted the fifth edition which has been reprinted five times, a record which tells of its appeal to both the practitioner and medical student.

It makes the knowledge of anatomy applicable to every day practice. The illustrations are profuse and will prove most helpful. The text is brief and to the point.

Human Behavior in Relation to the Study of Educational, Social and Ethical Problems. By Stuart Paton, M. D. Charles Scribner's Sons, New York. 1921. Price, $6.00.

Dr. Paton, who is lecturer in neuro-biology at Princeton, in psychiatry at Columbia and trustee of the Carnegie Institute, Washington, needs no personal introduction to the world of science. He has given to the age a masterly work on the most absorbing of world problems, man himself, and it is only through a careful, painstaking study of the human mechanism that means can be found for the establishment of human institutions.

The author states in his preface that his book is intended to serve as an introduction to the study of human behavior. The chapter headings give an idea of the scope of the book and are as follows: The Study of the Individual in Relation to Educational and Social Problems, Adjusting Mechanisms, Special Mechanisms of Adjustment, The Personality, The Development of the Personality, Organization and Synthesis, Controlling Mechanisms, Factors Determining the Trend of Activities, Habit Formation, Involution of the Personality, Imperfect Organization of Activities, Methods of Studying the Personality, The Intelligent Direction of Activities, The Study of Man in Relation to the Progress of Civilization.

This is a work of 465 pages and is most heartily recommended for the parent, the teacher, the physician, the student of social phenomena, the prospective reformer, the statesman and the philosopher. Our readers will not regret having this work within reach on the library table for winter evenings.

The Medical Clinics of North America. (Issued Serially, one number every other month.) Volume 4, Number 6. By Boston Internists. Octavo of 297 pages, including complete Index of Volume 4 and 35 illustrations. Per clinic year (July, 1920, to May, 1921). Paper, $12.00 net; cloth $16.00 net. W. B. Saunders Company, Philadelphia and London.

The Surgical Clinics of North America. (Issued Serially, one number every other month.) Volume I, Number 3. By Boston Surgeons. 345 pages, with 159 illustrations. Per clinic year (February, 1921, to December, 1921). Paper $12.00 net; cloth $16.00 net. W. B. Saunders Company, Philadelphia and London.

The Toxicity And Trypanocidal Activity of Sodium Arsphenamin. By Jay Frank Schamberg, John A. Kolmer, and George W. Raiziss. The American Medical Association Journal. Vol. 70, No. 26, June 25, 1921.

In parasitic disease in which specific remedies are applied to destroy the micro-organism, the value of the drug is determined by the chemotherapeutic index, i. e., the relation of the curative dose to the maximum tolerated dose. The authors have studied sodium arsphenamin and compared it with arsphenamin and neoarsphenamin. In this article, which is the third of a series on the subject, they give tables showing the toxicity and trypanocidal activity of sodium arsphenamin and also a table indicating the therapeutic indexes of the three drugs.

In summarizing, the following facts are emphasized:

1. The highest tolerated dose of sodium arsphenamin for white rats by intravenous injection was found to be from 212 to 215 mg. per kilogram of weight. The average tolerated dose of arsphenamin was 105 mg., and of neoarsphenamin, 200 mg. per kilogram.

2. The smallest trypanocidal doses of sodium arsphenamin varied from 16 to 24 mg. per kilogram of weight; the smallest trypanocidal dose of arsphenamin was 5 mg. and of neoarsphenamin, 9 mg. per kilogram.

3. The therapeutic dose (dosis curativa) of sodium arsphenamin was from eight to thirteen times less than the highest tolerated dose (dosis tolerata) which expresses the therapeutic index of this compound. The therapeutic dose of arsphenamin was twenty-one times less than the tolerated dose, and the therapeutic dose of neoarsphenamin was twenty-two times less.

4. Therefore, while sodium arsphenamin possesses the low toxicity of neoarsphenamin, it is much inferior to both arsphenamin and neoarsphenamin in trypanocidal or curative activity.

5. The true gauge of a remedy is expressed by its chemotherapeutic index, i.e., the relation of the curative to the toxic doses.

A Syphilitic Manifestation in the Nose. Harold M. Hays, M. D. American Medical Association Journal. Vol. 76, No. 23, June 4, 1921.

The engorged mucous membranes, covering the turbinates and the nasal septum, if such mucous membrane is not distinctly polypoid, will invariably shrink under the application of a 1 per cent cocain solution, to which is added a third part of a 1:1000 solution of epinephrin chlorid. If the mucous membranes do not shrink perceptibly under the application of such a solution there is in all probability a syphilitic infiltration of the mucosa. The nasal mucosa is first sprayed with the solution after which pledgets of cotton immersed in the medicament are inserted into the nose. These are removed in from five to ten minutes. If the mucosa still obstructs the nose, it is evident that there is some pathologic condition of this membrane which will not allow it to shrink, probably a syphilitic infiltration.

The author reported two cases. His concluding comments were:

A Wassermann test should be made in all cases of

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nasal obstruction in which the obstruction is due to a thickened mucous membrane which will not shrink under the application of cocain and epinephrin.

Syphilis of the Nervous System in Children. Edward Livingston Hunt. American Journal of Syphilis, Vol. V. No. 2, April, 1921.

In the congenital type of syphilis, the clinical signs seem to point to a more general involvement than is the case in the acquired type. The involvement of the nervous system occurs oftener in the congenital cases. Therefore, the lumbar puncture becomes an essential part of the examination of every case of unsuspected syphilis characterized by nervousness, backwardness, and defectiveness.

Juvenile paresis is the most frequent of all the various forms of syphilis seen in children. It is very similar to the adult type.

The author gives a number of case histories.

He comes to the following conclusions:

1. The condition is common.
2. The nervous system may be involved early.
3. A lumbar puncture may be of great help and should be a routine part of the examination of every nervous child.
4. Syphilis in children necessitates a blood and spinal fluid examination of the parents and vice versa.
5. Treatment is not very promising.
6. The stigmata are not necessary nor even frequent.

The Social Worker's Approach to the Family of the Syphilitic. Maida H. Solomon. Hospital Social Service, Vol. III, No. 6, 1921.

In the main, the social worker in syphilis need be no different from any good social worker. She should possess mental poise, sympathy, tact, and judgment. She must be interested in the medical as well as the social side of the problem. Syphilis is a contagious disease and should not be looked upon as a punishment for sin The moralist point of view should be avoided. The social worker must enter the lives of her patients as a human being, treating each family according to its individual needs.

In summarizing, the author states that the social worker's duties are:

1. To instruct the family how to avoid infection, emphasizing the seriousness of the situation, but avoiding over-frightening the family.
2. To find out whether any members of the family are infected, by arranging for family examination.
3. To aid the patient in disclosing the fact of syphilis in such a way that the mate acquires the right attitude.
4. To utilize the mate as an ally in making the patient take continuous treament.
5. To arrange for treatment of syphilitic relatives, and to see that it is carried through by endeavoring to develop a cooperative spirit, especially in the difficult problems of seemingly well relatives and syphilitic children.
6. To secure family examination for early symptom-free syphilitics and late syphilitics, recognizing that this is more difficult to bring about than the examination of the family of contagious patients.

Some of the more pressing situations one must be prepared to deal with are:

1. Readjustment of the mental life of the family.
2. Readjustment of the physical life of the family.
3. Economic difficulties in the families of late syphilitics including such situations as a working wife, diminished income, charitable aids etc.

One cannot offer any method of dealing with these situations. It is important for the worker to analyze the effect of her methods in each case, to plan new attacks, and to synthesize her successes and failures into a better technique.

FRACTURE OF SPINE OF TIBIA

Among about 1,000 fractures, Joseph J. Kurlander, Cleveland (*Jour. A. M. A.*, Sept. 19, 1921), has observed three cases of fracture of the spine of the tibia. He reviews the anatomy of the knee joint, and discusses the mechanics producing the injury. He is of the opinion that the tibial spine is practically always fractured by indirect violence, and that fracture or avulsion of the spine is due to sudden and powerful traction on one or both crucial ligaments, but usually the posterior. The tibial spine is so situated and protected by nature that it is practically impregnable to direct assault. In his three cases the history shows that a powerful traction on the crucial ligaments produced the injury in each case. The violence is applied while the knee is flexed and abducted and usually externally rotated. This injury may also occur if the knee becomes suddenly and powerfully hyperextended. There is sudden severe pain. The patient is unable to arise or straighten the knee Effusion and swelling are rapid, and there may be marked ecchymosis. Fracture of the tibial spine can be diagnosed positively only by means of the roentgen ray. The most presumptive evidence is blocking or locking of the knee, preventing extension; but a displaced semilunar cartilage may produce this phenomenon, together with the identical signs of fracture of the tibial spine. The treatment should be entirely conservative and should give way to operative interference only when repeated attempts to obtain full extension prove impossible. The knee should be manipulated under anesthesia until full extension has been obtained, and then immobilized in a splint or preferably in a plaster cast extending from toes to groin. It is best not to disturb this for about eight or ten weeks, at which time the cast is removed and massage and passive motion are instituted. Should the crucial ligaments be ruptured, the same treatment should be followed, except that immobilization is maintained for at least three months or more. The results of conservative treatment are usually highly satisfactory. Where chronic disability due to blocking of extension persists, it is best to remove the offending fragment of bone through the split patellar incision. The postpatellar pad of fat is removed, any obstructive mass is removed and the knee straightened. The incision is then closed. No suture of the patella is necessary. The leg is then immobilized for six weeks, after which the dressings are removed and motion commenced.

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ORIGINAL ARTICLES

A PLEA FOR THE GRIDIRON INCISION IN APPENDICITIS.*

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It would almost appear that an apology on my part would be necessary for again calling your attention to this subject of Appendicitis of which I am desirous of speaking, yet there is no other affection of the intraperitoneal lesions with which the internist or surgeon is more concerned than with the inflammation of the vermiform appendix. Nevertheless, I am prompted to do so by seeing and learning that many patients have had, and many surgeons are and have been employing other incisions in the removal or drainage of appendiccal affections. My remarks are, therefore, not made in any spirit of undue criticism, but with the hope that the so-called "gridiron incision" which to my mind, is the one of choice, may be used to its fullest advantage and beneficent results. It is, therefore, not presumed that a new procedure is offered you, but merely to review that which has been given you by one of the pioneers of surgery and which has stood the test well. I trust that my reasons for the exposition of this statement will be fully explained later in my remarks.

The history of appendicitis is interesting, for it was Ternelius, in 1567, who described what seems the first reported case of appendicitis, though the appendix was not recognized as the cause. Heisler, in 1753, published the details of an autopsy where the vermiform appendix was gangrenous and lying in a small collection of pus.

Thereafter, similar autopsies were reported from time to time, and in 1815, Prescott reported the first American case.

Melier, in 1827, described the disease of the appendix as a clinical entity and stated, "If it were possible to establish with certainty the diagnosis of this affection, we could see the possibility of curing the patient by operation." Then Rokitansky, in 1841, first called attention to the catarrhal inflammation of the organ. In 1843, Volz maintained that the appendix was responsible for more affections of the right iliac fossa than the caecum. Previous writers always maintained that the caecum became affected initially.

The world owes a debt of gratitude to Reginald H. Fritz of Boston, who in October, 1886, published his memorable article in the American Journal of Medical Science, on, "Perforative Inflammation of the Vermiform Appendix." It was he who first used the term "appendicitis" and forcibly demonstrated in a considerable number of cases that in all inflammations of the right iliac fossa, the cause was the appendix.

The next great advance in establishing affections of the appendix as a primary lesion was that of McBurney, when he described his point of localized pain.

The early surgery of affections of this organ consisted only in the evacuation of the abscesses which were pointing. It was an English Surgeon, Hancock, who in 1848 performed the first deliberate laparotomy for peri-appendicular suppuration and who proposed such treatment early. The drainage tube was introduced by a French Surgeon, Chassaignac, in 1859. Kronlein, in 1884, removed the appendix for acute disease employing an incision through the linea alba. This patient did not recover. In 1887, Morton operated on a patient with peritonitis, removing a perforated appendix with recovery of the patient. The simple straight incision through the right rectus was first used in 1884 by Gagen-Thorn.

The original "gridiron or muscle splitting incision" was first proposed by McBurney in 1893 and has since been further modified to gain more room in cases of emergencies.

The medical profession owes boundless gratitude and reverence in this special field of surgical operations, to the pioneer American operators, Han-

*Read before Wisconsin Surgical Association, Marshfield, Wisconsin, May 18, 1921.

cock, Willard Parker, McBurney, Fowler, Price, Morris, Richardson, Murphy and Deaver.

McBurney performed his first operation at Roosevelt Hospital on December 18, 1893. In 1889 appeared his article in the Annals of Surgery, Vol. 20, p. 38, the title of his paper being: *Incision made in abdominal wall in case of appendicitis, with a description of the new method of operation.* The original article contained the statement that the operation does not appear suitable for cases accompanied by suppuration about the appendix which require to be treated by extensive packing, nor in cases requiring a large intraabdominal dissection. The article also contained information that the operation had been performed on four patients, all cases of recurrent appendicitis, operated on in the interval between attacks. Little did McBurney realize that the disease would become such a common one and his incision so popular with many surgeons.

In looking over my records since 1905, I obtained data upon 863 cases where this incision has been employed by me personally. This number does not include those cases operated upon by me while in the United States Medical Service. Those records appear elsewhere. This series does not include those cases in which a right rectus incision was deemed advisable either for the disease proper or for exploratory purposes. Of this total number there were 379 cases where drainage had been instituted. 12 cases were done under local anaesthesia (novocain ½% Sol. being used). Of the local cases the youngest patient was 3 years of age, the oldest 80 years of age. Certain physical conditions making it necessary to employ this means of anaesthesia with no difficulty encountered in the performance of the necessary operation, yet this form of anaesthesia is not the one of choice to the writer. Local anaesthesia in appendiceal affections as well as in other domains of surgery has its limitations.

In perusing my personal case records the following case history was revealed:

Mrs. B. C., age 63, living at Chilton, Wisconsin, referred to me by Dr. R., March 29, 1912, with acute appendicitis. The patient was not a good surgical risk in that she was a diabetic and had an organic cardiac disease with poor compensation. The operation was done under novocain anaesthesia when a perforated gangrenous appendix was removed. Drainage was instituted. My notes made immediately following the operation state, "no pain connected with operation." and also that it was "the first operation for this condition under local anaesthetic done in Wisconsin." This patient made a satisfactory recovery.

Of the cases operated under general anaesthesia where this incision was used, the youngest was one year of age, the oldest 79.

I have found no especial difficulty in delivering appendices which were situated in the region of the hepatic area, namely those cases which have failed to complete circuit or descent to the right iliac region, nor, in those cases of appendicitis where the appendix was situated posterior to the bladder, being situated between the bladder and rectum. In several instances other conditions have obscured the diagnosis so that a primary diagnosis of appendicitis was questionable. In these several cases this same gridiron incision was employed.

There is no gainsaying that the right rectus incision, capable of increase upward or downwards, will always occupy a permanent position in surgery, and is in no danger of becoming displaced or obsolete.

It has happened that other surgical lesions may complicate or obscure the diagnosis of an appendicitis as evidenced in the following cases:

Mrs. B., age 26, Neenah, Wisconsin, was referred to me by Dr. M., June 16, 1908. This patient had been ill ten days with a history of an acute onset, pain in the abdomen and vomiting, and normal menstruation. The last period occurred two weeks previously. Her temperature on admission to St. Elizabeth Hospital was 102 degrees. A large tumefaction in right ileo—caecal region was present. A diagnosis of appendicitis with abscess formation was made and the gridiron incision was used. Upon opening the peritoneal cavity the appendix moderately enlarged presented itself. It formed a portion of the superior wall of an almost circumscribed and well defined fluid mass beneath. Upon lifting up the appendix the cavity was opened and a great amount of old decomposed blood escaped. The diagnosis was of necessity changed. The right tube, ovary, and appendix were removed and tube drainage instituted. The patient made an excellent convalescence.

A second case which was in some respects simi-

lar occurred August 15, 1915, Mrs. F. S., age 36, living in Oconto Falls, Wisconsin was referred to me by Dr. F. She gave a history of repeated pain in the right ileo-cecal region and was experiencing this same distress upon her entrance into St. Elizabeth Hospital. Upon examination a circumscribed cystic mass fixed was found in this region. Upon exposing the parts through a gridiron incision an ovarian cyst the size of an orange was revealed. The tumor and appendix was removed. The patient recovered.

A third case which is of some interest is as follows: Chas. D., age 46, Kaukauna, Wisconsin, referred to me by Dr. B., August 13, 1920, entering St. Elizabeth Hospital upon that day. The history of this patient is as follows: He was taken sick suddenly 24 hours previously with a severe pain in his abdomen, general in character, and which after a few hours became localized in the right iliac region. Nausea was present but no vomiting. Temperature upon his admission was 101, pulse 80. Upon palpation, rigidity of the right rectus muscle was marked, and a well defined tumefaction was found in the ileo-cecal region which was tender to palpation. The patient stated that a similar attack of sudden pain in the abdomen had occurred 22 years ago. In this attack he was not confined to bed and all soreness disappeared after 24 hours. Upon exposing the mass through a gridiron incision an enormously distended appendix filled with septic fluid and enteroliths was freed, the appendix being situated subcaecally. Tube drainage was instituted, and the patient went on satisfactorily to convalescence and recovery.

The ratio of appendicitis with and without abscess formation is about the same, in those cases which have been subjected to the gridiron incision as where the other incisions have been used for exposure. It is my belief that the number of perforated cases in my series compares in about the same proportion with the series as published by other operators, and in other hospitals. This statement is made advisedly and is not based upon personal investigation.

The number of post-operative hernias following drainage where the gridiron incision had been employed does in no way compare in number to those which have followed where other incisions have been used. In personal interviews with several surgeons of prominence it was about equally divided in their experience as regards post-operative hernia following the use of the gridiron incision or right rectus. In my series my records reveal that I have operated upon six cases of post-operative hernias following the use of the gridiron incision, whereas, where the right rectus incision had been employed the number of cases had been several times the number just stated. It has been my experience that the ease found in operating to overcome this deformity is many times greater than where other incisions have been employed The dissection can be executed with greater facility, recognition of the various layers of tissues with greater dispatch and the restoration to the normal relationship with greater satisfaction in repairing these defects where the gridiron incision had been used, and which I wish to emphasize.

You recall that this particular anatomical region through which the gridiron incision traverses is innervated by the ilio-hypogastric and ilio-inguinal nerves.

Referring to Deavers' Surgical Anatomy, the first named or "ilio-hypogastric nerve is a branch of the anterior division of the first lumbar nerves. After passing through the upper part of the outer border of the psoas magnus muscle and then downward and outward across the front of the quadratus lumborum muscle to the crest of the ilium, between the transversalis and internal oblique muscles it divides into an iliac and a hypogastric branch about two and a half inches behind the anterior superior spine of the ilium. The iliac branch passes through the internal and external oblique muscles above the crest of the ilium and supplies the skin of the gluteal region behind the area of distribution of the lateral cutaneous or iliac branch of the last thoracic nerve.

"The hypogastric branch passes forward along the crest of the ilium, pierces the internal oblique muscle at the level of the anterior superior spine of the ilium, and passes through the aponeurosis of the external and oblique muscle about an inch above the external abdominal ring. It sends muscular branches to the rectus abdominis and pyramidalis muscles, and cutaneous branches to the skin over the hypogastrium. The ilio-hypogastric nerves and its branches supply the external oblique, internal oblique, transversalis, rectus abdominis, and pyramidalis muscles, and the skin of the hypogastrium and of that portion of the gluteal

region below the anterior part of the crest of the ilium.

"The ilio-inguinal nerve arises in common with the preceding nerve from the anterior division of the first lumbar nerve. It is situated below the ilio-hypogastric nerve, diverges from it in its onward course, and crosses the upper part of the iliacus muscle to pierce the transversalis muscle near the anterior extremity of the iliac crest. It communicates with the ilio-hypogastric nerve above the iliac crest, where it lies between the transversalis and internal oblique muscles, both of which it supplies. It passes through the internal oblique muscle anterior to the anterior superior spine of the ilium, and runs through the inguinal canal, from which it emerges at the external abdominal ring. It supplies muscular branches to the transversalis, internal oblique, rectus abdominis, and pyramidalis muscles, and to the dartos, and cutaneous branches to the skin of the scrotum or labium and the upper and inner parts of the thigh."

While the exact distribution of the nerves is not always certain, nevertheless, practically it can be said that the muscle below the anterior superior spine is supplied by the ilio-inguinal and that above by the ilio-hypogastric nerves. The muscle fibers may be separated from their origin on the iliac crest to their insertion in the rectus sheath without endangering the nerve supply to any critical degree. In the ordinary interval case, simply separating the muscle fibers for a short distance suffices. Where more room is required, the separation of the muscle fibers must be carried to the rectus sheath and the sheath itself cut transversely by the knife.

Undoubtedly all present recall the statement by Robert Morris of the three halves concerning appendicitis. "An instrument and a half," "an incision of an inch and a half," and "a convalescence of a week and a half." The major portion of his remarks has remained unchanged with the passage of time.

That the discomforts following the gridiron incision are less owing to the small incision and direct exposure of the pathological lesion with a minimum amount of disturbance or handling of intraabdominal contents you will all agree who are partial to this incision, In suppurative cases contiguous viscera may be walled off by narrow tampons of gauze and the field thereby isolated.

The time consumed in performing this work is brief, most cases not requiring more than 10 to 15 minutes.

A brief anaesthetic, a short incision, and a minimum amount of tissue contact, both external and internal bespeak a lessened amount of discomfort to the patient following operative treatment and a more rapid convalescence. From an economic standpoint the latter should receive our serious consideration.

The cosmetic appearances of an infinitesimal scar appeals to most patients and should not be ignored by the operator.

The technique employed is as follows:

The skin is divided along an oblique line about an inch or an inch and a half internal to and opposite the anterior superior spine and passes downwards and inwards an inch and a half or two inches. After passing through the skin and subcutaneous tissues it will be seen that the line of incision corresponds with fibre of external oblique fascia which is cleanly divided and the external oblique muscle exposed. The fibers of the external oblique and internal oblique and transversalis muscles although the first named are almost at right angles to the two latter, are now thoroughly divulsed down through the posterior sheath to the peritoneum with either scissors, forceps or retractors. Most frequently it is not necessary to make any incision through their common aponeurosis just at the outer margin of the rectus muscle for more efficient or greater exposure. If necessary demands, the aponeurosis of the rectus at this point can be more thoroughly divided which frees the muscle and which is then drawn inward with a retractor. Frequently no retractors may be necessary to hold the tissues apart for seizure of the peritoneum. After opening same the desired distance the appendix is located with the examining finger to ascertain its position and also after orienting oneself as to the intraabdominal conditions the necessary steps may be taken for its isolation and removal.

After removal of the organ in the clean cases and in the removal of the appendix in infected cases, (for the appendix is removed in every case unless disintegrated), and after institution of

drainage, the tissues are closed in tiers in the following manner:

A moderately long plain catgut suture No. 1 double upon a curved, smooth needle is then taken and the peritoneum closed with a running mattress stitch, thereby opposing the peritoneal surfaces; when this is completed the suture is fixed and the muscular layers sutured through and through and the last suture tied. The same suture after having placed some reinforcement sutures of either plain catgut or silkworm gut in the fascia, may then be taken single threaded and a subcuticular closure of the skin made.

The gridiron incision when thus made and used affords most ready and convenient access to the appendix and also offers the greatest facilities for drainage and the least probability for subsequent hernia.

In not a few suppurative cases in this small incision no attempt was made to suture the tissues and by so doing no fear was experienced for the production of hernia for every muscular movement involving contraction tends to close the gridiron.

Upon innumerable occasions no especial difficulty has been found to palpate pelvic organs in the cases of females when necessary and where this incision had been used.

Finally, no difficulty has been encountered where this incision has been used, regardless of the sparsity or overdevelopment of muscular structures or the absence of fat or in the excessive deposition of this element as in the obese.

Briefly summarized the advantages of the gridiron are as follows:

1. It is an incision which has well stood the test of time, being proposed by McBurney in 1893.

2. The incision is not advocated for exploratory purposes.

3. The incision is suitable to young and old patients.

4. Local anaesthesia may be used in its execution.

5. The operation usually is not difficult of performance.

6. It is important and not difficult to avoid nerve injury of nerves supplying muscles.

7. The incision offers ample and satisfactory exposure.

8. The wound is small with consequent rapid repair and infinitesimal scar.

9. Brief convalescence.

10. Abdominal discomforts are at a minimum.

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NERVE INJURIES DUE TO ERRORS IN TECHNIC IN MAKING INTRAVENOUS ARSPHENAMIN INJECTIONS.

Dean Lewis. American Medical Association Journal, Vol. 76, No. 25, June 18, 1921.

Accidents following the intravenous injection of Arsphenamin, although uncommon, are very serious when they do occur. The author reports two cases in which the solutions of arsphenamin were injected into the nerve or the sheath surrounding it, severely damaging the nerve. Such cases emphasize the need to exercise extreme care in making injections. Pain radiating into the fingers when the first few drops of the solution are injected should be a warning that the needle is not in the vein and that the solution is being injected directly into a nerve or into the tissue surrounding it. Arsphenamin injected into or about a nerve may have a marked destructive action, causing extensive degeneration of neuraxes and the development of large amounts of scar tissue. The densely adherent scar which follows sloughing of the skin, if such ocurs, may seriously interefere with or render unsatisfactory a nerve suture.

GALL-STONES: THEIR BASAL ETIOLOGY*

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It is my purpose in this paper to present to you an opinion I have long since entertained, in respect to the basic etiology of gallstones. This opinion has been strengthened, not only by my own researches but especially by the researches of others, both here and abroad.

On May 8th, 1914, at a meeting of the Clinical Society of the German Hospital (now the Lenox Hill Hospital) New York City, I presented, (what I believe is the first contribution to American Medical Literature on the subject) a paper, entitled, *"The value of the determination of the cholesterin content of the blood in the dignosis of cholelithiasis"* subsequently published in the *Journal, A. M. A.*, and followed, two years later in *Surgery, Gynecology and Obstetrics,* by a more detailed presentation of the same subject. (1). (2).

In the preliminary paper the following summary was offered:

1. Almost all gallstones are formed largely, if not entirely, of Cholesterin.

2. A Hypercholesterinemia seems to be the fundamental and primary etiologic factor in the formation of stones.

3. In cases of Cholelithiasis, without fever, a Hypercholesterinemia is invariably found. (this opinion has since been modified).

4. Conditions simulating Cholelithiasis can be differentiated therefrom by a cholesterin-serum determination.

5. The Hypercholesterinemia of Cholelithiasis persists for a considerable length of time after the operative removal of the stones.

In the second paper of July, 1916, it was concluded: "These cases show that the cholesterinemia must be studied in relation to the clinical condition of the patient at the time the blood is examined before it can be properly interpretated and made to assist in arriving at a correct diagnosis. We must make the necessary allowances for the presence or absence of fever, jaundice, nephritis, progressive arterio-sclerosis, etc., and must also take into account the duration of the process of deposition in the gall-bladder.----A Hypercholesterinemia in the absence of arterio-selerosis, jaundice, and nephritis does not necessarily mean the presence of gall-stones. In my opinion we must realize that we are dealing (perhaps) with what can be likened to a diathesis--a cholesterol diathesis--. This diathesis is either distinctly pathological in that it may result in arterio-sclerosis, local or general, or in gall-stones, or it manifests itself (and then not as a diathesis) as a protective agency as in the infectious diseases and nephritis."

A few of these early, perhaps overenthusiastic conclusions have since been modified.

Many contributions have since been made to the subject. Some of them have added to our knowledge while most of them have largely confirmed the original work referred to. It is needless to review the literature at this time. A few of the contributions, failing as they do, in the proper interpretation of the measure of cholesterinemia, are opposed to the claim of a diagnostic importance to the determination. The work of recent years, both here in America and abroad, seems to me only strengthens my original opinions and brings that almost age-long question of the etiology of gall-stones, down to that most interesting and important substance--Cholesterol.

The fact that we frequently find stones in a gall-bladder which, both macroscopically and microscopically, will show no evidence of inflammatory change, should be proof sufficient that infection is not the primary etiological factor in the formation of stones. That gall-stones can be artificially produced by infecting the gall-bladder is far from proving the "Infectious Theory."

I am inclined to believe that infection, alone, will seldom, if ever, produce stones: stasis, sluggish drainage of bile, in addition to infection must be present to produce calculi. And yet, it is hard to conceive of such stasis or sluggish drainage of bile in the absence of inflammation *and in the absence of a change in the physical and chemical make up of the bile,* unless the drainage is impeded by conditions existing outside the gall-bladder and ducts, such as tumor masses, adhesions, malformations, etc. The work of Rosenow does not, I believe, show the primary cause of the formation of gall-stones.

Even without the many evidences which point to the metabolism of cholesterol as being primar-

*Read before the Seventy-fifth Anniversary ("Home Coming") Meeting of the State Medical Society of Wisconsin, Milwaukee, Wis., Sept. 5-9, 1921.

illy involved in and responsible for the formation of stones, the mere fact that practically all stones contain cholesterol, and the great majority of these stones are largely, if not entirely, composed of cholesterol, points strongly to cholesterol--especially cholesterol in abnormal amounts--as the basic cause of the formation of stones.

We have always spoken of certain *predisposing* factors when considering the etiology of gall-stones. The most important "predisposing" factors are

1. *Sex.*
2. *Pregnancy.*
3. *Life Habits.*
4. *Climate.*

while other *contributing* factors, such as infections, especially Typhoid Fever, Obesity, Diabetes, etc., must be differently classified, because they are, in themselves, abnormal and pathological conditions. The above *predisposing* and *contributing* factors should be looked upon as *Clinical* etiological factors.

In any consideration of the etiology of gall-stones we must not overlook the fact that we are not dealing with a "lesion" in the sense that organic or tissue pathology results: we are dealing with a "lesion" that can be likened to an *inorganic* lesion, a lesion that is almost in its entirety (exclusive of cellular debris and micro-organisms) *a chemical substance.* Surely then, in considering, or searching for the basic, primary etiological factor, it is most reasonable to point to this same chemical substance which makes up the "lesion." And, in as much as all of the "predisposing" and "contributing" and "clinical" etiological factors are intimately associated with this same chemical substance, it is more than reasonable to conclude that this chemical substance, Cholesterol, is the basic, primary etiological factor in the formation of biliary calculi.

PREDISPOSING FACTORS.

1. *Sex.*

It is generally agreed that gall-stones occur far more frequently in females than in males. Seventy-five percent of all cases of biliary calculi are found in females. Females are much more prone to show hypercholesterinemic states, largely, without doubt, because of gestation, and there is now some evidence to show that the corpora lutea play some role in the endogenous, synthetic source of cholesterol.

2. *Pregnancy.*

Pregnancy is, without doubt, the most important and the most frequent "predisposing" factor in the formation of gall-stones. It is pregnancy that accounts for the very high incidence of stones in the female sex. Osler states that 90% of women who have gall-stones have borne children and Mayo states that 90% of women who have gall-stones and have borne children identify the beginning of the symptoms of cholelithiasis with some particular pregnancy. The more recent statistics of (3) Althabe and Nicholson show that 89% of women with gall-stones had borne children. It is needless, perhaps, to review the literature in support of the early findings of both Chauffard and his associates, and my own early work, which showed a very close association of pregnancy and cholesterol metabolism. Investigators in this field are unanimous in their findings. Pregnancy is accompanied by hypercholesterinemia and this hypercholesterinemia is a progressively increasing one as the pregnancy advances to term. The hypercholesterinemia persists for some time after the birth of the child. This cholesterinemic "diathesis," according to Althabe and Nicholson is enormously exaggerated during the genital life of women. There seems to be a definite need for this hypercholesterinemia during what surely is the most critical period in the functional life of the woman. I am inclined to the belief that future researches will show that the lipoids and their closely related substances such as cholesterol are intimately involved in all protective phenomena during "Storm and Stress" periods of human life. We have many evidences to substantiate this belief. However, in a consideration of the subject under discussion, it is not necessary to go into further details. My idea is merely to show that the hypercholesterinemia of pregnancy is not an accidental condition. It must be looked upon as a definite, regular accompaniment of pregnancy.

Chauffard, I think, has always believed that there is an endogenous source of cholesterol, as well as exogenous source from the colesterol content of the food ingested. Recent work of Chauffard and his associates (4) seems to show that the suprarenals are the source of cholesterol. It is

known that the suprarenals function most actively during pregnancy, when the organism, as previously stated, has most need for lipoids. In addition to the regular finding of a hypercholesterinemia during pregnancy it has also been noted that the cholesterol content of the bile is increased during pregnancy.

Further evidence indicating a synthesis of cholesterol is shown by the work of Gamble and Blackfan (5) who found that there was excreted in the feces of infants during the experimental period from 1.4 to 3.4 times the amount of cholesterol present in the food.

3. *Life Habits.*

We are wont to believe that a sedentary, *inactive* life, overeating, tight lacing, etc., predispose to the formation of stones. These factors are only influential in that they affect general metabolism and the proper drainage from the biliary tract. In other words they influence cholesterinemia and the amount of cholesterol of the bile.

4, *Climate.*

We have long since known that individuals inhabiting the temperate zones are far more prone to gall-stones than are those inhabiting the tropics. Gall-stones are a rarity in the tropics. But only recently have we been able to find a satisfactory explanation for this remarkable difference in the incidence of cholelithiasis, and this explanation is based entirely on cholesterinemia.

The interesting researches of C. D. DeLangen (6) show that the cholesterol content of the blood of East Indians is only about half that found in the blood of Europeans, while the cholesterol content of the bile in the East Indians is extremely low. The Japanese show slightly higher amounts in the blood and bile than do the East Indians. In 1918 DeLangen published additional data (7) which strongly substantiate my contention that a hypercholesterinemia is the basic, primary etiological factor in the formation of gall-stones. DeLangen, in studying the natives of Java was impressed with the rarity of gall-stones. He found only one case among 15,000 patients at the hospital and this one case was not a native of the East Indies. Not a single case of gall-stones was encountered among 40.000 outpatients. At another hospital only 7 cases of gall-stones were found among 67,500 cases, while at still another hospital, 8 cases in 47,000. In 1914, throughout the whole of Java, only 3 cases of gall-stones are recorded among 58,021 hospital and dispensary patients. When gall-stones are found in the natives of the East Indies, they are not the cholesterin stones which we usually see, but are principally composed of calcium-bili-rubinate, the rare pigmented type found in haemolytic jaundice. Subsequent statistical data collected by De Langen (8) show that during the last ten years, there have been diagnosed only 30 cases of gall-stones among 422,943 admissions to government infirmaries. The chemical examination of gall-stones obtained from 15 cadavers showed that only 3 to 11.2% of cholesterol went into their formation.

When we compare these most interesting findings of De Langen with those of investigators in temperate zones, both in Europe and America, we cannot help but be profoundly impressed with the role that cholesterol plays in the etiology of gall-stones. Osler tells us that gall-stones are exceedingly common--5-10% of autopsies of subjects dead of other causes showing gall-stones. We know, too that gall-stones, as we see them, are largely, if not entirely composed of cholesterol; stones containing practically 100% of Cholesterol are very common and in my own researches I have found that cholesterol composes at least 95% of all stones in which cholesterol is a part of their composition. These high percentage cholesterol stones, except following Typhoid Fever, are practically always bacteriologically sterile, and the gall bladder shows little or no pathological change.

CONTRIBUTING FACTORS.

Infctions of the gall-bladder and ducts are without doubt the most important and at the same time the most frequent of the "contributing" causes in the formation of gall-stones. But infection alone, probably seldom, if ever, causes gall-stones. The mechanism of gall-stone formation as a *result* of infection consists of stasis of the flow of bile, which permits then, of undue concentration, and of alteration of the bile, not only in physical consistency, but in chemical constituents. It is to be admitted that an infection of the bile may so alter its chemical makeup, as to lessen the power of the bile salts to hold the cholesterol in solution. In the presence of an infection and in the absence of a hypercholesterinemia, (and therefore with a normal cholesterol content of the bile) gall-stones

will form very slowly, if they form at all. We have just discussed in detail the exceedingly low incidence of cholelithiasis in the natives of the East Indies and have laid special stress on the exceptionally low cholesterol content of the blood and bile of the East Indian natives. And yet, the natives of the East Indies are *very susceptible to infections of the liver and biliary passages.*

On the other hand, in the presence of an infection, and in the presence of a hypercholesterinemia, and therefore an increased cholesterol content of the bile, gall-stones are formed not only very frequently but very quickly as well.

Almost any infection may act as a "contributing" cause in the formation of biliary calculi. Typhoid Fever is the infection "par excellence." Statistics are agreed that about 4% of cases of Typhoid Fever develop cholecystitis. In a recent study of a large series of Typhoid Fever cases, 4½% of the cases developed a cholecystitis. Of the 8 cases of cholecystitis, 7 of them came to early operation, and the gall-bladders in each case contained stones--and these stones were all practically pure cholesterin stones. It is true that the bacteriological examination of the stones in each case showed living typhoid bacilli, but in support of my contention, it is equally true, and I believe far more important from the standpoint of basic, primary etiology, that a hypercholesterinemia is also present during and following the convalescence of Typhoid Fever. If infections play so important an etiological role, as advocates of the "infectious theory" would have us believe, why is it that Typhoid Fever, alone, of all the infections, is so intimately associated with the etiology of gall-stones. It is not the infection, but the hypercholesterinemia, that we must associate intimately with the etiology of gall-stones. Until it can be shown that a hypercholesterinemia follows the other infections that are usually put down as "contributing" factors--and we have been unable to show that--it must be admitted that the "infectious theory" of the formation of stones is not proved.

The contention of Cunningham (9) (I am mentioning Dr. Cunningham especially, because of the "Home Coming" atmosphere of this meeting) cannot be subscribed to. He speaks of two "necessary conditions" to the formation of gall-stones. First: (It is only the 1st in which we are, at present intrested) An infection is necessary for the production of cholesterin and the lime salts, the principal ingredients of gall-stones." I am inclined to doubt that Cunningham really means what his first "necessary condition" apparently leads one to believe. An infection is not necessary to produce cholesterin and the lime salts. Cholesterin and the lime salts are normally present both in the gall-bladder bile and in the freshly secreted or excreted bile from the liver. The very excellent work of Rothchild and Willensky (10) shows them to be in agreement with the contention that the infectious theory has been displaced by one in which abnormalities in the cholesterol metabolism are believed to be primarily concerned in the formation of gall-stones. Not only is it possible to produce a hypercholesterinemia by feeding an excess of cholesterol in the food, but even to produce small concrements in the gall-bladder.

Other "contributing" factors in the etiology of gall-stones, such as Obesity and Diabetes, are metabolic abnormalities in which the metabolism of cholesterol is intimately involved. In both Obesity and Diabetes with which, clinically, we frequently see cholelithiasis associated, a hypercholesterinemia is usually to be demonstrated.

The mechanism of gall stone formation.

Cholesterol is universally present in the animal body; it is a constituent of all body cells and all body fluids and is normally derived most largely from the cholesterol content of the food. There is some evidence to show that there is, also, a synthetic source of cholesterol--the suprarenals. Clinically we also have some evidences which point to an endogenous source of cholesterol. The remarkable increases of blood cholesterol seen in some cases of Nephritis are not to be explained on the basis of an exogenous source alone. Cholesterol of the food is absorbed from the intestinal tract and is a secretory product of the liver through the bile.

In the absence of infection.

Increases and decreases in the measure of blood cholesterol are directly responsible for increases and decreaese in the measure of bile cholesterol: as the blood cholesterol increases so does the bile cholesterol and vica versa. Bile is to be looked upon as a colloidal solution subject to the usual physical and chemical laws, and especially subject to the results of supersaturation of any of its

ingredients, namely--precipitation. It is to be presumed that the bile salts which are thought to hold the cholesterol in solution, are present in sufficient quantity to hold only a definite—let us call it a normal amount of cholesterol—in solution. In hypercholesterinemic states the bile is altered in its composition and the bile salts are no longer able to hold the excess of bile cholesterol in solution. Slow or hindered drainage of bile only expedites the precipitation of cholesterol under such circumstances. It is believed, also, that toxaemia on the basis of such states as have been classed as etiological factors --- such as constipation, overeating, lack of exercise, etc., alters the bile as it is produced in the liver, in so far as this toxaemia lessens the amount of bile salts which hold the cholesterol in solution.

Under these circumstances, and with only metabolic alterations present, the formation of biliary calculi are very apt to occur-- and these favorable circumstances for their formation are to be seen especially in those factors, which, clinically, we are wont to call "predisposing."

In the presence of infection.

In the presence of an infection and in the presence of a hypercholesterinemia (and therefore an increased amount of cholesterol in the bile) gall-stones are frequently and quickly formed. The deposition of cholesterol and lime salts on a nucleus of inflammatory debris and microorganisms is the accepted explanation. Cholecystitis and Cholelithiasis during and following Typhoid Fever is an excellent example. But without a hypercholesterinemia (and therefore with no undue amount of cholesterol in the bile) even in the presence of an infection, gall-stones are very rarely formed and then only very slowly. The exceedingly low incidence of cholelithiasis in the tropics in the face of a high incidence of biliary tract infections, is a most striking and illuminating example.

Personally, I believe the most important predisposing etiological factor in the formation of gall-stones is pregnancy. In any consideration of the subject the incidence of cholelithiasis in the two sexes must never be lost sight of. It is, without doubt, the most outstanding feature of the whole subject. The advocates of the "infectious theory." must, it seems to me, account for the remarkably low incidence of gall-stones in the male, for there is no doubt that the male is just as "susceptible" to infections of the biliary tract as is the female. They must also, it seems to me, account for the remarkably low incidence of cholelithiasis in the natives of the East Indies, who, we are lead to believe, are very susceptible to infections of the biliary tract. The fact that only women are "predisposed" to pregnancy is responsible for the high incidence of gall-stones in women. Cholesterol metabolism during pregnancy, and I refer especially to the hypercholesterinemia that is always to be found, is physiological and is, probably, (I say this with reservation) a "Storm and Stress" reaction on the part of the organism.

IN CONCLUSION

In the formation of gall-stones all the generally recognized predisposing and contributing factors or causes thereof are intimately associated with an altered cholesterol metabolism, either physiological or pathological, manifesting itself as a hypercholesterinemia with a corresponding increase in the cholesterol content of the bile.

It is this hypercholesterinemia and excess of bile cholesterol which are primarily responsible for the formation of stones.

Infection plays a role, but a very minor and infrequent one in the basal etiology of cholelithiasis.

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THE MANAGEMENT OF CARDIAC DISEASES IN A CHIDREN'S DISPENSARY.*

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The patient with cardiac disease has long been one of the step-children of the public dispensary. If broken compensation ensued, anxious parents sought relief for a child who had "swelling of the feet and terrible shortness of breath." Clinic assistants listened attentively for pulmonic seconds and purring thrills or measured cardiac capacity in terms of musical murmurs. If the spectacular element was absent, interest languished, both in the home and in the clinic. Else, a diligent assistant eliciting a history heard that some member of the family had a "leakage of the heart." Given a perfectly functioning dispensary, the mother was given explicit instructions. These usually embodied the institution and maintenance of rest. Even in very recent years a social service department considered itself discharging its best effort that could most efficiently police its cardiac material. Parents were enjoined to keep their children as inactive as possible, while older children with presentiment of some befalling danger learned to watch their P's and Q's. This operated to make life a burden to the child having a mild heart lesion. Sutherland relates a characteristic example. A boy of six years was brought to him following an attack of fever. On examination, the apex of the heart was felt pulsating a quarter of an inch outside the nipple line, and a definite short apical systolic murmur was present. He was kept under observation for six months, during which time both conditions persisted. The boy had no symptoms and was advised to lead an ordinary life. But the parents who had been in a state of alarm ever since they had heard of the heart murmur, considered another opinion advisable.

The physician to whom he was referred decided that great precautions must be taken, and advised that the boy be brought up under private tuition or at a special invalid school, and not be allowed to indulge in any save the mildest exercise. The boy grew up and all his youthful energy and enthusiasm were kept in check by the numerous medical 'Don'ts' which were rigidly observed. His desire for an army career was disappointed as his heart was not considered strong enough for the strain. When he came of age and was free of medical control he went ahead on his own lines. "He can follow the hounds and break his collar bone with equanimity," says Sutherland, "but he will never do anything useful in the world." Where the child was not reconciled to the enforcement of a curtailed activity, the lack of proper management often went to the other extreme. Here we had the picture of frequently recurrent acute attacks with ultimate cardiac disaster. Those that "got by" were later relegated to the shelves of the insurance statistician. In exceptional instances some of the larger dispensaries undertook to meet the problem of the adult handicapped by cardiac disease—some of which pioneer work was done in the admirable Occupational Therapy Department of The Massachusetts General Hospital.

Our war experience drove the problem home. 200,000 cases of heart disease can not be left to a handful of social service agencies to reflect upon. That was the number of men disqualified by the draft on account of Heart Disease. The magnitude of the civilian problem has been emphasized

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*Read before the 75th Annual Meeting State Medical Society of Wisconsin, Milwaukee, Sept. 9, 1921.

by Hoffman of the Prudential Insurance Company and by Connor.

Holt estimates that 2.5% of the school population are suffering from heart disease. Probably the great mass of these children enjoy comparative physical comfort, and numbers of them are unaware of the existence of any such disease. Yet the death rate from heart disease keeps steadily on - about 200 per 100,000 of population per annum.

In adopting preventive measures, our program must be entirely an educational one. We can not as readily as has been done in the fight against Tuberculosis, exploit the natural fear that most people have for that dread disease. The first step in the program must be the accurate determination of the incidence of the disease among our school population - a thorough combing of that population by examinations made with clothing stripped. The plan of attack must then be one that will not only appeal to the child's interest, but be capable of sustaining that interest.

The adoption of a new method of classification of Heart Disease was a very important step in our present system of handling the problem of the cardiac child. That classification, devised by the Association of Cardiac Clinics, and approved by the Association for the Study and Prevention of Heart Disease embodies two very definite improvements on the older conception of valvular disease. It affords a ready appreciation of the patient's reserve as we can best determine it, and, too, enlarges the sphere of our possible preventive methods. Patients are divided into five classes.

Class 1. Patients with organic heart disease who are able to carry on their habitual physical activity.

Class 2. Patients with organic heart disease who are able to carry on diminished physical activity.

A. Slightly decreased.
B. Greatly decreased.

Class 3. Patients with organic heart disease who are unable to carry on any physical activity.

Class 4. Patients with possible heart disease. Patients who have abnormal physical signs in the heart, but in whom the general picture, or the character of the physical signs lead us to believe that they do not originate from cardiac disease.

Class 5. Patients with potential heart disease. Patients who do not have any suggestion of cardiac disease, but who are suffering from an infectious condition which may be accompanied by such disease; e. g.; rheumatic fever, tonsillitis, chorea, syphilis, etc.

Classes 1 and 2 have constituted the greater number of those children who attend our special Cardiac Clinic.

Second to the newer classification of these patients, one of the factors that we attribute our success to is the group method of driving the lessons home to the children. The nervous child acquires a sense of repose, the diffident ones become more responsive. Children who do not show the proper interest are dropped from the clinic, as these only serve as drawbacks to the others.

The general plan of organization has been along the lines laid down by St. Lawrence as used in a similar clinic at St. Luke's Hospital, New York.

Patients are referred to the Cardiac Clinic from the several Medical Clinics which are conducted daily in the Out Patient Department of the Childrens Hospital. The personnel of the Special Clinic consists of the following:

Two Examining physicians,
One Social Service Worker,
One Physical Director,
Volunteer Workers,
Pupil nurses,

Upon admission to the Special Clinic, the child's weight, height, height-weight ratio and temperature are taken. The history is completed and the child is stripped for examination. The mother is advised as to the prevailing condition, her cooperation secured, heart condition classified and the child given instructions as to the general hygiene and exercise. These instructions are received at the same time by the Social Service Department who see that all necessary consultations are carried out. This includes removal of such foci of infection as tonsils and adenoids and carious teeth. When thought advisable, the child is admitted to the hospital ward for 48 hours, so as to make more complete observations. Electrocardiograms are obtained on all children. These have been done either at Columbia Hospital or by Dr. Malcolm Rogers.

Patients in Classes 1 and 2 as well as those in class 4 are sent into the physical culture drill after examination. Drills last 15 to 30 minutes

The exercises used in this class are those suggested by St. Lawrence except that our drill is entirely done with dumb-bells. These seem to sustain the interest of the children better than simple calisthenics. It is surprising to note the precision with which commands are executed. After a few visits, even those who have had chorea exhibit a remarkable dexterity. This is attributable to the class-room method. These children, long after the acute infection is over, display, when alone, an unusual degree of self consciousness. Their response to the group method suggests that a great deal of the subsequent restlessness of the choreic child are attributable not so much to latent infection, as to subjective perversion of function.

The children then return to the class-room and a nutritional class is conducted. The material and charts used for this work are those employed by Emerson. While not universally applicable, the nutritional condition of the child has seemed to be an important factor in our results. We have utilized this phase of the program more than is evidently done by some cardiac clinics. What is most important, the nutrition class affords the child another angle of interest. Stars are offered for weight gain, exercise and rest. Every child is instructed to get 12 hours sleep every night. Once the idea of competition is inserted, it is amazing how children will change time—worn bad habits in order to excel. I refer particularly to such habits as coffee drinking, missing breakfast, late retiring hour and the like.

The Social Service Department correlates the work done in the clinic with home activities. Through the instrumentality of the Social Service Department, vacations were procured for the children showing the evident need of such a rest.

To sum up, I would call attention to the three important phases of our program.

First, the definition of cardiac disease in terms of cardiac power. This is determined by its response to exercise. The question is not what sort of noises one hears, as "What can the heart do under certain conditions of rest and exercise." It not only furnishes us with a practical interpretation of myocardial tone, but it communicates to the patient's family and to the patient a happier outlook. Not restriction but direction is the program. Is it too much to say that even an infected heart may have a complete recovery? We must remember that the child's heart is not embarrassed by the degenerative changes that impede the adult's recovery.

Second, the use of graduated exercises in the treatment of these patients. Children are not told to refrain from play. They are told to play to their heart's content, as long as the effort doesn't tire them. They are warned to stop upon the first appearance of fatigue. It is interesting to recall that Brush in reviewing the study of 2,500 cases of valvular heart disease treated by exercise applied through natural work and play methods says, "Those exercising most (the 'triers' as we have come to call them) get best results."

Third, combining the nutrition class with the cardiac clinic creates added interest and a greater cooperation which is so essential in any clinic group. It provides, too, a more tangible basis for stimulating in these children the desire to attain excellence in health. When once that desire is created in the child's mind our efforts in preventive medicine will gain their greatest measure of achievement.

REPORT ON AN EPIDEMIC OF GASTRO-ENTERITIS.

BY G. H. FELLMAN, M. D.

MILWAUKEE.

During the latter part of August, 1920, there appeared in the City of Milwaukee and County, a gastro-enteric infection which differed from the usual type in being contagious, with an incubation period of two to four days, and could not be attributed to dietetic errors. That it was not due to our water or milk supply is proven by the fact that it was present at widely separated towns in this State as well as in another State about the same time.

The onset of the attack was sudden, in apparently healthy children and in the majority began at night, with vomiting, fever, anorexia and intermittent abdominal pain. Children old enough to describe their symptoms complained of headache and some pain in the extremities. The vomitus consisted of undigested food and later a bile stained mucus. Sometimes the child vomited once, in others it was frequent and continued for two to five days, and in a few was blood stained. In the milder types the temperature was 99-100 and in severe cases 102 to 105.

Pulse 100-150. The breath had an acetone odor, the tongue clean unless the attack persisted, when it became coated. A mild delirium was often present and a stuporous or a restless condition during the first day. Diarrhoea of a mild type occurred in the majority, the stools being a light yellow at first and later a bright green with a considerable mucus; only a few showed bloody stools. In the more severe types the face was grayish white in color, the eyes sunken, the extremities cold in spite of a high rectal temperature, and rapid loss of weight occurred, amounting to a pound per day in some of the cases under my care. Marked rectal tenesmus was present in those cases having severe diarrhoea.

On Sept. 15th I was called to see W. S., a boy six years old, who had contracted the disease at Hartford, Wis., three days previous. The personal history showed a well developed boy who had been well until the onset of the present attack, and gave no history of errors in diet. The physical examination showed a pale emaciated boy with sunken eyes surrounded by dark rings, a grayish pallor of the face, the pupils equally dilated responded to light. The tongue coated with a brownish white fur, the breath had an acetone odor, the pharynx hyperemic, the heart sounds normal, the lung findings negative, the abdomen soft and showed epigastric tenderness on palpation. There was no evidence of rigidity of the neck, the reflexes normal, the Kernig, Babinski, and Oppenheim signs were absent. The boy was having ten bowel movements per day, the stools being watery, containing a great deal of stringy mucus and some blood. The urine was negative, and the patient very restless, complaining of abdominal pain and marked rectal tenesmus. Temperature 101-104, pulse 124 of low tension, resperation 22. Medication showed no effect on the condition except that opiates relieved the pain. Three days later the child showed the typical "air hunger" and died twelve hours later.

From this time until October, at least 35 similar cases of a milder type were seen, all of which recovered.

On October 14th saw M. P., age 14 weeks, taken ill 48 hours after exposure to another case in the same home. She became ill ten hours before I saw her, with vomiting, temperature 102, and had yellowish watery stools. Even so short a time after the onset the child showed the sunken eyes, the grayish white pallor of the skin and the marked emaciation with the acetone odor of the breath. The child was restless, had a whining cry, evidently due to the rectal tenesmus. Except for the epigastric tenderness all other examination was negative. In three days the infant developed "air hunger" respiration and died 15 hours later. Post-mortem six hours later revealed the following: the body of a well nourished infant, with post-mortem staining in the dependent portions. The heart was normal, the lungs normal except for the post-mortem staining in the posterior lobes. There was no free fluid in the pleural cavity. The liver had the normal macroscopic appearance, the spleen purple in color, somewhat enlarged and doughy consistency, the mucosa of the stomach hyperemic, the external surface of the ileum showed three areas 1½x¾ c. m. in diameter, yellowish green in color and the transverse colon showed a similar area 2½x1 c. m. in size. Examination revealed these areas to be ulcers which had penetrated to the serous coat of the bowel, the intestinal mucosa was deeply injected. The kidneys were normal, the mesenteric glands enlarged and the appendix and the bladder normal.

On October 14th I was called in consultation with Dr. Owen, saw L. H., a boy four years old, who had a convulsion a few minutes before my arrival, who was taken sick the night before with vomiting, fever and restlessness. Following a cathartic he had two loose green watery movements. Temperature 104, pulse 120, respiration 22. Physical examination shows a well developed boy, pupils react normally to light and accommodation, the fauces reddened, tongue slightly coated, no rigidity of neck, the heart sounds clear, no abnormal murmurs or arrythmia, the breath sounds clear, no rales or areas of dulness. The abdomen is soft and there is tenderness on pressure in the epigastrum. The child complains of intermittent colicky pains and the Kernig, Babinsk and Oppenheim signs are negative. He was removed to the hospital and blood examination showed 4,800,000 R. B. C. and 6,800 W. B. C., the urine negative. The stools which numbered six in 24 hours, contained blood and mucus. Specimens of these stools were submitted to Drs. Kristjanson, Church and Miss Te Brake, Technician at the Milwaukee Children's Hospital whose reports I herewith submit.

Microscopical examination of the stools made

by Dr. Kristjanson 40 hours after onset of the attack showed the following: Case L. H., October 12th. Smears made from the specimen of stool, which was thin and watery, showed as the predominating organism, a short bacillus and a coccobacillus, gram negative. Several dilutions were made from this stool. Colonies of dilution No. 4 showed a pure culture of morphologically the same variety as seen in the smears. The microbe grows on the ordinary culture medium in the first twenty-four hours.

A guinea pig was inoculated with the pure culture of this small bacillus. One cc. of an emulsion of a 24 hour growth, into the peritoneal cavity. Shortly after the inoculation the pig became quite sick and died in 40 hours.

Post-mortem Examination.

Due apparently to an accident which was unavoidable, the post-mortem was not performed immediately after death. There was a marked distention of the abdominal cavity, but there seemed to be no free gas present. On opening the peritoneal cavity, there was a considerable amount of bloody, serous fluid in both flanks. The surface was intensely congested and discolored. The large bowel was almost black. The several coils of the intestine, as well as the anterior, and lower margin of the liver, was covered with an acute, fibrinous exudate. The parietal as well as the visceral peritoneum was dark red in color. There was a slight reaction locally to the injection in the groin, but no abscess formation had occured. Smears and cultures made from the peritoneal cavity show apparently a microorganism identical, morphologically, to that isolated and grown from the specimen of stool, namely a coccabacillus, gram negative. The character of the colonies in the culture tube was the same as that observed in the culture from the diluted stool.

Report of Dr. Church: Specimen of blood streaked mucus from feces.

Direct smears showed chiefly the following organisms: Streptococci, Non Hemolyticus; large and small Bacilli, gram negative Polar staining; numerous pus and red blood cells.

Agar Plate cultures were made and the above described bacillus was isolated and subcultures made on the following media with results tabulated as follows:

Incubation 49 hours at 37° C.

Lactose broth—fermentation with gas.

Dextrose broth—fermentation with gas.

Saccharose broth—fermentation with gas.

Mannite broth—no fermentation, no gas.

Indol broth—positive.

Gelatine broth—not liquified.

Grams—negative polar staining.

Motility—slightly motile, probably exaggerated molicular movement.

Tentative Diagnosis.

The bacillus is a member of the dysentery group, needing only the agglutination test to confirm the cultural findings.

Report of Miss Te Brake:

Organism from stool—small gram negative coccoid bacillus.

Mannit—acid gas xxx.

Dextrose—acid gas xx.

Lactose—acid gas xx.

Saccharose—acid gas x.

Guinea pig fed suspension of organisms daily for seven days.

Autopsy showed no evidence of ulceration in bowel or stomach-organs all apparently normal.

Serum of Guinea pig does not agglutinate the organism.

The organism is not agglutinated by the following:

Bacillus Coli communis agglutinating serum.

Bacillus (Flexner) Dysenteriae agglutinating Serum.

Bacillus Dysenteriae (Shiga) agglutinating serum.

Bacillus Typhosus—para A.—para B.

Stools submitted four days after onset of the attack showed the colon bacillus had overgrown the organism so very predominating in the stools of the first two days. The patient gradually recovered within a period of sixteen days. The number of like cases rapidly diminished from then on, but in the middle of November, a marked increase of a milder type of the same infectious gastro-enteritis appeared which continued until December 15th. It was not until December 9th that I was able to obtain the stools of another case within the first 36 hours after the onset of the attack. These stools were submitted to Dr. Kristjanson for examination, who reported as follows: Case 2 E. H. Dec. 9th. Smears made from the specimen of stools were made up almost entirely of bacteria, which included a large variety of bacilli of which a rather small coccobacillus

seemed to predominate; this bacillus is gram negative. There were also noted a few streptococci and diplococci.

Cultures made on blood serum showed the predominating organism to be a gram negative, short bacillus, apparently the one shown in the smears.

December 11th. Smears were made from the second specimen of stool and showed the following varieties of organism; First the predominating organism in the smears seemed to be a short gram negative bacillus.

Second, also a larger, more slender gram negative bacillus, fewer in number.

Third, a number of large, gram positive bacilli.

Fourth, a few gram positive cocci in short chains, also a few diplococci.

Cultures show the predominating organism to be short, gram-negative bacillus, also gram positive cocci, such as were described in the original smears. These cultures were grown on blood serum and plain agar. Dextrose broth inoculated with bacterial growth from these stools, showed a small amount of gas production.

The following cases were seen at the Children's Hospital: H. P., age five months, taken ill Oct. 17th with vomiting, diarrhoea and a temperature of 102. The child had been in contact with another child in the same home who had a similar attack two days previous. The stools which were numerous, contained mucus, pus and blood. The infant was removed to the hospital. The physical examination at this time revealed only negative findings except that there was abdominal tenderness in the epigastric region. A blood count showed 26,400 W. B. C. and microscopic examination of the stools showed the presence of a small coccoid bacillus, a gram positive and a gram negative diplococcus. October 20th the infant developed "air hunger" respiration and died the same day.

On October 19th F. W., age two years, from the same home, was taken to the hospital, having ten to twelve stools per day containing mucus and blood. Smears from the stools showed a preponderance of a gram negative coccoid bacillus, a large gram positive bacillus, a few streptococci and gram positive diplococci, W. B. C. 10,200, Hgb. 70 per cent. In three weeks the child made a gradual recovery.

Numerous other case histories might be cited as I saw at least 125 cases, similar in character, but not as severe as some of the above during the two waves that passed over our city in the Fall of 1920.

The third wave of a similar type began March 28th, 1921, and continued until May 15th, 1921, but the cases were of a milder type, none of the cases that came under my care, proving fatal.

In conclusion, I desire to state that I believe that this was a distinct type of gastro-enteric infection due to a specific organism, but I am not positive that the gram negative coccoid-bacillus, which we isolated in our cases as the predominating organism, is the specific germ producing the disease.

DEFECTIVE DELINQUENTS IN THE ARMY OF OCCUPATION OR THE AMERICAN FORCES IN GERMANY.

How They Are Treated in the Disciplinary School.

BY LT. COL. L. VERNON BRIGGS, M. R. C., U. S. ARMY.

(LATE DIVISION PSYCHIATRIST, HEADQUARTERS SECOND DIVISION, GERMANY.)

During the war with Germany, there were in the American Forces many defective delinquents, who were not of low enough mentality to be rejected, but who proved to be incorrigible, and who were a source of a great deal of trouble to their commanding officers. Many of them were repeatedly tried for petty offences, the most common of which was absence without leave, although charges of petty thieving and assault were not infrequent.

When this type of delinquent was absent without leave, he got into all sorts of trouble; their absence was usually outside of the Area, and they maintained themselves by begging, borrowing and living with dissolute women; or sometimes French families, usually poor themselves, would listen to their hard-luck stories and take them in because they were soldiers. Fully 75% of them came back diseased.

When these men were returned to their organizations for trial, after being picked up by the military police, they were usually in a rundown condition and discipline, however severe, seemed to have little effect upon them. Their clothing was generally tattered and torn and very dirty, and if they had been long absent it was often

filled with vermin. These old clothes were sterilized and then given back in their ragged condition to the men, or if they were destroyed the delinquent was given any old cast-off uniform, usually a mis-fit.

Discipline consisted of from one to three, or sometimes six or more months of hard labor. After being given their old, slovenly clothes, they were put at some menial work, such as shovelling coal, kitchen police, or sewer work, and were marched, followed and often preceded, by armed guards—through the streets of their companies and about the towns, attired in these dilapidated garments or in blue denim overalls, to distinguish them from other soldiers. They were thus made a part of the so-called "prison gang", and treated as criminals, being kept under guard night and day—guards with loaded rifles stood over them while they worked and accompanied them wherever they went. They were ridiculed by other men, disgraced and degraded. They were put on short rations—often reduced to bread and water, as punishment for further misdeeds committed while under sentence. During their time of sentence they lost their drill practice and usually their calesthenics, and they were invariably quartered in close, ill-ventilated and often dark rooms or tents, with cots so close that their bodies almost touched one another. When they had completed their sentences and returned to their companies they were shunned and ridiculed by their companions and were down-and-out in their organizations, with the result that they were soon again absent without leave or repeated the other offences for which they had been convicted.

This was the condition in the Army of Occupation in Germany when I left it in the spring of 1919. It is the condition today in most of the Army organizations.

In August of this year, 1920, I visited the American Forces in Germany, and Col. Peek, who had formerly been adjutant in the 76th Division, and who is now "G-4" on General Allen's Staff in Coblenz, with whom I had often before discussed the treatment of delinquents as being inhumane and ineffective, informed me that he had now worked out a plan which was most successful. In November of last year he had established a disciplinary barracks, about 2½ miles southeast of Coblenz, on a high plateau overlooking the Rhine. I suggested and he agreed that this disciplinary barracks should hereafter be called the Disciplinary School.

We drove out there and Col. Peek called out his men, who were put through their drill on the Parade Ground. I never saw finer set-up soldiers than the men of these three companies proved to be; they were immaculate in dress and person, and prompt in obeying the orders of their commanding officers. They stood in open ranks while we walked within a foot of each for inspection, so straight and immobile that it was difficult to believe they were alive. Not an eye turned, and I could not see that a man even winked as we passed by—and these men had heretofore been considered the worst element in the Army, hopeless as to discipline, and still were not defective enough to be disqualified for service. The majority were men who had been sentenced for absence without leave, and the balance had been guilty of a long list of other delinquencies and crimes.

The physician who had examined them on entrance to this school considered that a large proportion of them were defective. Those whom he found actually feeble-minded he returned to the States, but those who were classified as "morally defective" he felt should not be returned, as the treatment it was possible to give them there made them into as good soldiers as there were in the Army.

Now let us follow the prisoner, defective or otherwise, as now handled by Lieutenant Col. Peek, in the American Forces in Germany:

Soldiers who are absent without leave are picked up all over France and Germany, and other delinquents of various kinds are arrested wherever they may be, and all are sent to their organizations for trial and sentence. All sentences of more than a few hours or a few days must be to the Disciplinary School, where they are to serve their full time.

When the prisoner arrives at the school, usually with the oldest uniform the company has to give him—sometimes so flagrant a mis-fit that the tattered sleeves hang below his hands—he is at once sent to the tailor, where measurements are made for a new uniform. He is then made clean —virtually sterilized—and examined by the doctor, who makes a report as to his condition, mental and physical, including teeth, etc. The new

uniform, without insignia, of course, is then issued to him, together with a new and complete outfit, such as is prescribed for every soldier on active duty. This includes materials for keeping boots and gun in proper condition, beside his mess-kit, clothes and toilet articles—toothbrush and powder, hair brush, soap, towels, handkerchiefs, etc. He is given special instruction as to the care of his person, teeth, feet, etc. He is assigned to a light, well-ventilated dormitory, and instructed how to place each article that has been issued to him on his cot in the same position as the like article on every other cot, so that the inspecting officer can, at a glance, determine if any article is missing or in poor condition. In the morning every bed is made up and the mattress turned half-way down on the bed, the various articles being arranged on this turned-over mattress.

He is then put at whatever work may be indicated as a result of his examination. The men who have been absent without leave are often in a run-down condition, poorly nourished and exhausted. They are given light duties, such as learning to take care of their guns, taking them apart and putting them together again, pressing and cleaning uniforms or other tailor work, or some practical mental training which will come into play in Army life. Instead of being deprived of a portion of their rations, or put on limited rations, as many prisoners are, a diet is given them to build them up.

As soon as the newly-admitted delinquent is in "condition", which is usually within a few days or a week, he is put under a disciplinary routine, which interests him greatly as a soldier. The routine is intensive drilling eight hours of every day of the week, except two. Of these, one is Sunday, when there are only certain forms to go through; on the other day drilling is neglected only in the afternoon, when all take part in athletic games and sports. Calesthenic exercises are also given, and certain gymnastics from time to time. In the evenings there are recreations and amusements, such as moving pictures, music, etc. As no man is sent here for less than one month, even the shortest-term men get most valuable intensive training, and when they are returned to their companies, instead of being looked down upon, made butts of and socially shunned, they are among the best-dressed and best set-up men in their organizations, and are respected and often chosen to be drill masters and instructors.

This system has proved to be successful. The school was organized last November, and when I was there nine months later, 700 men, out of an organization of 15,000 soldiers, had passed through the school, with an average sentence of four months. Of this 700, only 20 had been returned. Those who have passed through often revisit the school, and are quite proud of what they have done there. On the Fourth of July the men were told in the morning that the day was theirs to do as they pleased. There were to be games and athletics in Coblenz which they were free to attend, but they must return by a certain hour in the afternoon. About 100 men were serving sentence at that time; all went off on that day and every one returned on time.

I have always held that the defective delinquent should be handled in an entirely different manner from the normal offender, and especially is this so in the case of women. Compare the above-described way of handling defective delinquents with the way defective delinquent women were treated in a Massachusetts prison only a few years ago—and for all I know, may still be treated. My attention was called by a former Governor to the fact that young women prisoners, because they would not work at the tasks assigned them or follow out the rules of the institution, which were not made applicable to these defectives, were "spread-eagled" on wire springs covered only with a blanket, tied hand and foot to the edges of the beds, and kept, according to the records, in some instances 26 hours in this position. This punishment was intended to make the defective "give in". If she gave in at the end of eight, fifteen or twenty-seven hours, she was released. Another humane mode of treatment as carried on in this prison was to lock these girls up like wild animals in special cells, where they were fed by pushing in bowls of bread and milk or other light diet, through partly opened doors, until their spirit was broken, or until they had become docile and amenable to the will of those in whose power they were.

This class of defectives, neither insane nor feeble-minded, need special study and scientific care and treatment in order to reach the best that is in them; such treatment as I have described is bound to call out their worst qualities. I have

always advocated and do now urge a separate institution or school for the training of this class of persons, that they may be taken out of our prisons, out of our institutions and schools for the feeble-minded, and given over to the care of a staff of scientists and teachers, who will not attempt to handle them as a unit, but will study each individual and ascertain just wherein that individual is defective, and then classify them in groups of from one upwards, planning and prescribing the individual needs and treatment of each group, to the end that they may be made useful and at the same time be protected from the irritations and influences in their environment which bring about the very conditions found in institutions of the prison type above described. Evidently such conditions are also found in Bedford Reformatory, New York; in spite of the claims of this Reformatory, as of our Massachusetts prison, of humane treatment given women prisoners, there is quite a large class of defectives of whose needs they are apparently totally ignorant—at any rate, their conditions are such as to make it impossible for them to treat these difficult cases intelligently, scientifically and humanely. According to their own statements, they have, after all these years of experience in the care of delinquent girls, only arrived at the primitive method of treating defectives by coercion, punishment, and in some instances, actual cruelty, which they would not be permitted to inflict upon a dog or other animal not of the human species.

As you all know, the hospitals for the insane, presided over by educated and scientific physicians, would never think of treating these defective cases as they are treated in prisons and reformatories. I remember that, when I was a member of the State Board of Insanity, we sent a small group, three white and one colored, of what were supposed to be incorrigible defective delinquent girls, who had been passed on from one institution to another, to the Superintendent of one of our State Hospitals, with the request that they be specially studied, with a view to utilizing the best that was in them and of utilizing their tremendous superfluity of physical force with considerable intelligence, which had been misapplied and misdirected. These girls were reported to have gone through the walls of their rooms as if they had been made of paper, to have nearly killed one physician, and to have committed many delinquencies, moral and criminal, as well as flagrant breaches of discipline. After a month, during which they had been pretty lively, I visited the hospital and found all happily at work and among the most efficient and best-behaved inmates of the hospital; and this had been accomplished without force or punishment. One, the Superintendent told me at the end of the season, had canned more tomatoes than any other patient in the hospital; another was doing some extraordinarily good work on a sewing-machine; and the other two were also doing well, employed according to their personal needs.

Why can not investigation be made of what is being done with this class of offenders in institutions where occupational therapy is specially studied and scientifically applied, as in the Army of Occupation and in many of our schools for feeble-minded? Then let us urge, as I have before, a school for this special class. I do not believe that there is one of these defectives who has not got some vulnerable point—something in him that will respond to the right care and treatment. But nothing can be gained and nothing has ever been gained by breaking their spirit or their will. They are an enormous expense to the community under present methods, and are continually passed from one institution to another, without receiving treatment of any permanent benefit to themselves, to the institutions, or to the community; and wherever they are, they hamper the work of the institution with the class of inmates for which it is designed.

OPPORTUNITIES FOR DISPENSARY SERVICE.

The Section on Venereal Diseases of the Associated Out-Patient Clinics has offered to act as a clearing house for information regarding opportunity for dispensary assistants in the venereal clinics in New York City.

A letter and questionnaire were recently sent to the directors of the various venereal disease clinics, inviting them to state their needs for assistants and to specify not only the qualifications desired, but the clinical and professional opportunities offered.

In reply to this letter many applications for assistants were received, both for men and women, graduates and students. In most instances physicians with no special training in venereal disease will be considered. Any young physicians, or others recently locating in New York, who desire an opportunity to learn this specialty should communicate with the Venereal Disease Section of the A. O. P. C., 15 West 43rd Street, New York City. Dr. Alec N. Thomson, Secretary.

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EDITORIALS

WORK.

"I PITY no man because he has to work. If he is worth his salt, he will work. I envy the man who has a work worth doing and does it well. There never has been devised, and there never will be devised, any law which will enable a man to succeed save by the exercise of those qualities which have always been the prerequisites of success, the qualities of hard work, of keen intelligence, of unflinching will."—Theodore Roosevelt.

TRI-STATE DISTRICT MEDICAL SOCIETY.

THE Tri-State District Medical Society will hold its annual meeting in Milwaukee, November 14-17, at the Auditorium. A reading of the program published under the heading "Association News" in this issue should tempt even the most confirmed stay-at-home doctor to lock up his office for these four days and enjoy the opportunity afforded to hear a score of the most eminent members of the profession brought here to our door from the four corners of the country.

It will be a strenuous time, for work begins with clinics at seven in the morning and extends through to late at night. Social features include a smoker on the evening of the third day and the meeting closes with a banquet Thursday evening.

The organization postponed its meeting several weeks to avoid any interference with the meeting of our State Society in September and is deserving of the whole-hearted support of the profession not only of Milwaukee but of the entire State.

EVERY PHYSICIAN SHOULD BE A MEMBER.

THE American Red Cross has announced that it will hold its annual Roll Call from the 11th to the 24th of November. The expenses for its work for the disabled soldiers alone are running at the rate of $10,000,000 yearly, although it took in last year in dollar membership dues $6,000,000. In addition there is the public health work, consisting of public health nursing, the establishment of health centers, nutrition service for undernourished children, disaster relief and courses in First Aid, Life Saving, Food Selection, and Home Hygiene and Care of the Sick to be carried on.

Calls for Red Cross service are more insistent than ever. The public health activities are expanding rapidly, and the work for the disabled soldiers is also increasing, as there are now 26,300 of these men in government hospitals—eight times

as many as in 1919—and more are reporting for treatment at the rate of a thousand a month. The Red Cross looks after these men, helps them to make out their applications, frequently lends them money to tide them and their families over until their government compensation comes through, and provides recreation, convalescent comforts and home service while they are under treatment.

It is plain that the membership must be greatly increased if the work is to be continued. Everyone knows that our debt to the soldiers must be paid. But everyone does not know the value of public health work, and it is for the physicians, who have stood by the Red Cross so loyally in the past, to stand by it now, not only by joining, but by urging others to join.

EARLY DIAGNOSIS OF CANCER.

MY observations force me to the conclusion that ignorance as to the significance of the early symptoms of disease, rather than the fear of surgery, is the chief cause of delay in submitting to treatment.

Every woman over twenty-five years of age should know that a lump in the breast is just as acute a disease as an intense pain in the region of the appendix. She should be informed that, if she seeks the advice of a competent physician immediately after the lump is discovered, she will be rewarded. In a number of instances the lump which she feels will not be a lump at all, and the experienced physician will be able to tell her that an operation is not indicated. If a distinct lump is found by the physician an immediate operation must be advised.

The woman who seeks advice early for a lump in the breast and submits to an immediate operation by an experienced surgeon, increases the probabilities that this operation will consist of the removal of the lump only, and should this lump prove to be in the early stage of cancer, she will lose the breast, but with a large chance—over ninety per cent—of an ultimate cure.

Every married woman who has borne children should know that she is running a greater chance of cancer of the uterus than a woman who has not borne children. Her protection against cancer depends upon the information that she should seek the advice of a physician the moment she observes something unusual in the menstrual discharge as compared with previous periods, or when she observes a discharge between periods, or after the menopause. Such an irregularity by no means indicates cancer, but it does indicate a careful examination by a competent gynecologist.

Every adult should know that any sensation observed in the region of the abdomen below the diaphragm which might be called "indigestion," pain, belching of gas, discomfort after eating; any change in the normal time and character of the stools, blood in the stools, nausea or vomiting—should mean the immediate consultation of a physician for the purpose of a thorough examination, before treatment is instituted. Such symptoms are by no means always signs of cancer of the stomach or intestines, but we know that delay is dangerous. The majority of the public delays, and when the advice of a physician is sought, many add to the period of procrastination by administering treatment without a thorough examination.

Every adult, especially male, should know that the appearance on the skin or mucous membrane of the mouth of any kind of an area differing from the normal skin or mucous membrane, such as a wart, an ulcer, an unhealed wound, is an abnormality which, if left alone, may change into cancer. I am confident that cancer of the skin and mucous membrane of the oral cavity will practically disappear if the public is given this information in such a way that it will be understood and acted upon.

The medical profession must educate itself in the early recognition of these little lesions of the skin and mucous membranes, and in their proper treatment.

The profession as a whole has much to learn in the proper excision of such areas with the knife, in their removal with the cautery and when not to try X-rays and radium.

Every adult male who smokes must know the added danger he incurs of cancer of the oral cavity, lips, tongue, and mucous membrane of the mouth.

Every individual should understand the importance of keeping the mouth clean and seeing a dentist from time to time. Such oral sepsis and the care of the teeth are much more important to smokers.

The profession should know that when a smoker comes to them because of a painful, or changed

area on the mucous membrane of the mouth, the most important thing to do is to emphasize that tobacco in any form must be discontinued at once and the teeth be placed in perfect order. If the area does not promptly heal when this has been attended to, it should be completely excised with the knife or a cautery, or both.

Every parent and every adult—male and female—should be informed that pain, tenderness, swelling localized in a bone or joint, or a limp or loss of function of an arm or leg suggests some trouble in the bone or joint, and the most important thing to do first is to have an X-ray examination. Only in this way will tuberculosis, osteomyelitis and bone tumors come under observation at a time when a cure can be accomplished not only more often, but with less, if any, mutilation.

The profession throughout the country must be made to realize that a correct diagnosis rests as much upon the data which are readily obtainable as upon laboratory tests. A clinical history must be carefully obtained and a painstaking and thorough physical examination made, as well as the laboratory tests. The clinical history and examination are only too frequently neglected.

The physician must be convinced that the time for practicing medicine alone has passed, even in the rural districts. It is impossible for one man to make a complete investigation. Physicians must group themselves together in order to give their patients the benefits of modern diagnostic methods and the better interpretation by men who specialize in certain groups of diseases, rather than attempt to become proficient in all.

It is well to remember that of old the physician was a teacher as well as a healer.

Non-use leads to loss of function. The disappearance of the family physician and the increasing number of specialists has been associated with the non-use of the teaching function. Every physician — practitioner and specialist — should feel the responsibility of teaching those with whom he comes in contact. The nurse also must be instructed to become a teacher among those under her care in sickness and their families.

Every hospital throughout the country can be developed into a teaching center.

We have today much valuable information approved by the medical profession on preventive medicine, on personal and public hygiene, on the importance of county, city and state public health departments; on the early signs and symptoms of disease. But we must not leave to the Government, to national and state medical societies, and to the public press the entire responsibility of conveying this information to the general public in the proper form. Each physician and each graduate nurse must teach those with whom they come in contact.

Today more than ever before the individual and the family need a competent medical adviser.—*Joseph Colt Bloodgood.*

A DOCTOR OF THE OLD SCHOOL.

I CAN see him still as in the long ago, with his beard so long and white as snow, hanging two feet below his chin; and the hair on his head was white and thin.

His face! A face beloved by all, a forehead broad and grand and tall, the sparkle of life in his deep blue eyes, to look into them was to realize that the soul within was great and good; kindness and charity he understood, stooped were his shoulder and frail his frame; Old Doctor Marshall—that was his name.

Our old family doctor—everybody's friend, always ready his helping hand to lend, simple were his manners and gentle his ways, a little old fashioned as they say now-a-days.

But he gave to all the best he had, and many are the hearts that he made glad. He was all that was noble and great and grand, yet so humble a servant that all could command; the rich, the poor were alike to him, and not to answer a call he deemed a sin. His work he held sacred, his calling high, as I now see his goodness methinks you and I might well emulate him, his kindness and beauty by mixing his virtues with our own daily duty.

He lived true to his calling, God's worthy tool, for he was a doctor of the old, old school.—*Arthur G. Bosler.*

AS OTHERS SEE US.

DOCTORS ASK CO-OPERATION.

The medical profession is at its best when it shows the spirit which prompted Cancer week. The doctors say frankly that their attempts to find

an absolute cure for cancer are ineffective, and they assert that if there is to be any check on the disease, which costs 80,000 lives a year in this country, it must be through prevention. Preventive medicine must have the co-operation of the public, and it must be an understanding co-operation. So they have arranged Cancer week, Oct. 30 to Nov. 5, for the education of the public in the only way to prevent cancer.

This is a distinct breaking away from the tradition which has enveloped the practice of medicine in mystery, and accorded superpowers to the practitioner. When the doctors say, as Dr. Bloodgood said, that the medical profession has reached the limit of what it can do for the cure of cancer, and that this limit has not controlled and cannot control the disease, they show a spirit to which the public is likely to respond. If going to the people with medical facts will save life and prevent suffering, they are going to the people, and if that shocks the code of ethics, the code of ethics will have to conform itself to human need or be shocked.

So during Cancer week the doctors are going to co-operate with health departments and lay organizations to put the facts about cancer before the people. They will show that, whereas the chance of curing cancer in advanced stages is only one in ten, in the early stages the chance is nine in ten. People will be advised to consult a doctor on the first signs of what may develop into cancer. Possibly half the cases will prove not to be cancer, but surely a precaution is worth while that gives a 90 per cent chance for life instead of a 10 per cent chance.

What the doctors are asking is an opportunity to use their skill to cure cancer when it can be cured. The message of Cancer week is to insure the body against cancer as it is insured against accident or the house is insured against fire—with this great difference, that while all that accident and fire insurance can do is to provide compensation for loss, this is insurance which will save.—*The Milwaukee Journal.*

PAIN-KILLER.

Less than a century ago, there were no anaesthetics such as chloroform or ether. When your ancestors had to submit to the surgeon's knife, they were strapped to the table and gagged to muffle their screams.

The University of Georgia now officially recognizes Dr. William Crawford Long as the discoverer of anaesthesia. It claims that he performed the world's first painless surgical operation, using ether, March 30, 1842. This will start much controversy among medical men, for the Hall of Fame in New York has bestowed the same honor on Dr. William Thomas Green Morton of Massachusetts. After experimenting on himself; Dr. Morton made his first painless operation, by ether, September 30, 1846.

Similar controversies wage around nearly all great discoveries, which usually have been the result of the work of many instead of any one individual. The use of anaesthetics was one of the lost arts, practiced by the ancients and rediscovered by Morton or Long. Herodotus recorded that the Scythians produced a painless state of stupefaction by using the vapor of hemp seed. Pliny, the naturalist, who died in the year 79, wrote this about a plant called mandragora: "It has a soporific power on the faculties of those who drink it. The ordinary potion is half a cup. It is drunk against serpents and before cutting and puncturing lest it should be felt." Surgeons 700 years ago recorded that they made operations painless by having their patients inhale the vapor of opium, hemlock, mulberry leaves and a host of other ingredients.

Americans rediscovered the process about eighty years ago—and thought they had something new. This makes you wonder if civilization runs in circles. Chinese, according to their histories, had flying machines 22,000 years ago.

Rediscovery of a lost art, however, is as important as the original discovery. Doctors Long and Morton saved millions from pain. Statues will be erected to them—but not many, for they merely found a way to prevent suffering. Most of the statues are erected in honor of those who spread suffering—warriors. We do a lot of things backword in this contradictory thing called life.—*The Madison Journal.*

WHAT A LAWYER THINKS OF A DOCTOR.

Alton B. Parker, formerly Chief Justice of the Court of Appeals of the State of New York says: "Where will you find another man to match the

average doctor? He lives the true altruistic life, devoting himself unreservedly to others. His skill and time are yours on the shortest notice, in the blackest hour of night, and in the worst of weather. His devoted unselfishness, ready sympathy and healthy good humor but increase his gray hairs. I, for one, expect to find a neat M. D. shingle decorating very many of the more palatial Heavenly Mansions on Good and Faithful Avenue."—*Medical Review of Reviews.*

LIMITING THE FEES OF SURGEONS.

Shall lawyers be allowed to charge lucrative fees for their counsel or their litigation, and authors be unrestricted from accepting all the income which they can realize from popular books or plays and business men and financiers continue to reap large profits, and at the same time, shall the fees of surgeons, whose services are humanitarian works of charity, be specifically limited? The question has become an issue as a result of the action of the board of trustees of Johns Hopkins hospital in fixing the maximum fee for an operation at $1,000 and the maximum fee for attending a hospital patient at $35 a week.

There is moral justification to the custom of physicians and surgeons to charge what their services are worth, founded mainly on the financial status of the patient. They charge the average patient less than their services are worth and are in the habit of contributing their services free as acts of charity, to the benefit of the poor. It is only from wealthy patients that they can and do get adequate compensation, whom they charge on the basis of training, experience, equipment and accommodation.

The practice of varying the fees in relation to the financial ability or capacity of patients does not rest on the assumption that patients who have much money should pay more for medical or surgical service simply because they are rich. The high fees are regarded as being the normal fees, as they are the fees which enable a physician or surgeon to be excellent in his profession. The service is worth the large fees.

The fact that patients seek the physicians and surgeons whose fees are large is somewhat of an actual proof that they consider the service to be worth the price. As they are able to pay for service which they believe to be superior, they should not and generally do not object if other patients, who have less means, receive similar service for lower prices, or for nothing.

Physicians and surgeons seem to hold the views which have just been elucidated. And it cannot be denied that they have the privilege of earning a competence, as well as lawyers, writers, business men and financiers. There may be exorbitant fees; if there are, patients may choose their doctors. Members of the medical profession whose services are in demand will in all probability not abandon the prevailing method of free-assessment. —*The Appleton Post-Crescent.*

THE JOURNAL CLINIC

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CLINIC OF F. GREGORY CONNELL, M. D., OSHKOSH.

CASE I.—1439. Mr. C. D., a traveling salesman, 26 years of age, single, born in Wisconsin, first presented himself for examination on January 17, 1921.

Family history: Parents negative. He has no brothers. One sister had tuberculosis of the lungs and died in Nov. 1920, another sister has heart trouble.

Past history: He had diphtheria in September, 1917, antitoxin was injected and he was sick in bed 10 days. He had the "Flu" in 1918, sick a week, no complications. He served in A. E. F. 19 months, had "dysentery" in France, but does not remember the details. Had traumatic burn of his eyes and wears glasses. He had tonsillitis 2 weeks ago with enlargement of the glands of his neck. All his life he has had two or three bowel movements half an hour or so after meals.

Present Complaint: Beginning in June or July, 1920, noticed an urgent desire to have a bowel movement *immediately* after each meal. Immediate relief following evacuation. No pain, merely a tenesmus. There was no diarrhea, nausea, vomiting or "dyspepsia". No loss of weight. Patient does not consider himself "nervous". Examination:

Head: pupils and eyes negative.

Throat: tonsils congested. Posterior pharyngeal wall red.

Neck: no glands palpable now.

Lungs negative.

Heart negative. P. 90, B. P. S. 130, D. 100.

Abdomen: negative. No inguinal glands palpable.

Rectal: negative.

Proctoscopic examination negative.

Reflexes slightly exaggerated.

Blood count: Hem. 95%: r. b. c. 4,940,000: color index .9 plus. w. b. c. 10,400: polys. 58: s. lymph. 36; trans, 3: cosin .3: Wassermann negative.

Urinalysis: sp. gr. 1021: reaction acid: no albumin: no sugar: no casts: otherwise negative.

Stool was brown, soft, alkaline reaction, contained meat fibre, mucus, fat cells, but no parasites. Gram positive bacteria in majority.

Fractional test meal: shows the emptying time within normal limits and the acid curves in proper relation.

In as much as there had been no organic pathology discovered thus far in the examination, it was suggested that Mr. D. be examined under the X-ray after a Barium meal. It was not convenient for him to do this at that time so it was postponed.

No treatment was given.

When Mr. D. next reported, five days later his complaint had entirely disappeared and at the last report six months later, reported himself as well.

SUMMARY.

Urgent and imperative bowel movement immediately after meals, of six month's duration, the cause was not ascertained, but after examination there is sudden and permanent improvement. This is an instructive case in a negative way, because it shows what may occur, and might serve as a control in many therapeutic experiments.

To call this a "neurosis" begs the question, only confuses the issue, and is of no benefit in an understanding of the case.

Case 2.—5188. Mr. M. V. H., a student, white, aged 19, single, height 6 feet 2 inches, weight 158 lbs., first presented himself on January 18, 1921.

The family history is negative.

Past history: Patient had "Influenza" in 1918, otherwise negative.

Present complaint is constipation of one year's duration, which is gradually becoming worse, with only four bowel movements in the last three weeks.

He has no pain or nausea, and vomiting only twice. Took castor oil, one ounce, on January 14th and two ounces on January 15. No cramps, but a little rumbling in his stomach, then the oil came through without much bowel movement. Character of stool unknown, no blood.

His appetite is very good, he has some "gas" of late. No diarrhea. He has no headaches, backaches or other symptoms.

Examination:

Eyes: pupils very active, dilated, react normally and are equal.

Teeth in good repair.

Throat: tonsils not diseased. Pharyngeal reflex almost absent.

Chest: deformed, due to scoliosis, very slight.

Lungs: negative.

Heart: sounds and position normal. P. 80, B. P. S. 125, D. 90.

Abdomen: epigastric triangle broad, abdominal wall well developed. Muscles rather rigid, no distention, no palpable mass. Spleen not palpable, liver dulness normal, kidneys not palpable. Left iliac fossa a trifle tender on deep palpation.

Genito-urinary negative.

Rectal: negative.

Glands: no enlargement of glands.

Extremities: tremor negative. Knee jerks exaggerated.

Blood showed: hem. 95: r. b. c. 4,920,000: color index .9 plus: w. b. c. 9,500 polys. 62: s. lymph .29: trans. 7: eosin .2 Wassermann negative.

Urinalysis: sp. gr. 1007: reaction sl. acid. Slight trace of albumin: no sugar, no casts, a few pus cells.

Stool examination: shows color brown: consistency soft: reaction alkaline: undigested food present, chunks of mucus: heavy gram positive bacteria and a few unidentified cells present. No parasites or cysts.

Proctoscopic examination showed mucous membrane pale and oedematous, otherwise negative.

Fractional test meal shows fasting stomach contents Hcl. 58, total 70, with a drop to 10 and 20 at ¼ hour and the highest point 35-45 at 2½ hours, emptying time within normal limits.

Barium X-ray shows: barium passes into a markedly dependent stomach, bulb of good size, immediately seen. Duodenum normal, antrum smooth, motility free. Stomach very large.

There is no 5 hour residue. The head of the meal being in the descending colon.

24 hours shows filling of the entire colon, apparently normal. The marked feature from the reontgenological examination is enteroptosis and redundency, Haustration is about normal.

48 hours shows colon still filled.

4 days residue shows the colon apparently entirely filled very redundant.

7 days showed Barium all passed from the intestinal tract except a small amount in the rectum. Barium enema shows incompetent ileocecal valve, redundant and dilated sigmoid.

This man presented himself on the day following Case 1, and is markedly different but is in many respects similar and in conjunction with each other, would seem worthy of review in the Journal Clinic.

In this case, like in No. 1, a diagnosis was not arrived at (of course constipation not being a diagnosis), the examination failed to reveal any evidence of organic pathology causing the delay in evacuation of the bowels.

The incompetency of the ileocecal valve at one examination was not considered to be of any great patholo-

gic import. The X-ray findings seemed to point toward the condition of "Dyschesia" which has been described by Hertz in which there is delay in starting, and lack of completeness, in the act of defecation itself.

Acting upon this hypothesis, Mr. V. was placed upon a diet containing a large amount of bulky residue and the usual hygienic rules regarding bowel movements were explained and their importance emphasized.

The result has been most satisfactory, almost too sudden and satisfactory to be permanent, but at last report, six months later, Mr. V. has no complaint to offer and has regular daily evacuation of his bowels.

These two cases should emphasize a fact that is frequently overlooked, that is, that it is unnecessary for every patient coming to a Doctor's office to choose between two alternatives, viz. the taking of medicines or the undergoing of operation.

Such cases are not usually presented in Clinics, but are not without instructive features.

Case 3.—4874. Miss L. W., a girl 21 years of age, born in Wisconsin, of Bohemian parentage, occupation, a nurse, presented herself for examination on Nov. 11, 1920.

Family history was negative.

Past history: Appendix removed, 3 years ago, because of pain in her *left* side. She had three attacks, 3 or 4 months apart, lasting 3 or 4 days. The attacks were of sudden pain which shot to her heart, with headache, and nausea, no vomiting, temperature or chill. No relation to ingestion of food, time or character of, and not related to menstruation which was regular and she had no leucorrhea. Bowels and urination were O. K. She was in the hospital 2½ weeks, made a satisfactory convalescence and had no similar attack for 2¾ years. She had influenza 2 years after her operation without complications or sequelae. Her tonsils were removed, also a nasal polyp, one year ago.

Present Complaint: In June 1920, became a surgical nurse. In Aug. 1920, had an attack of pain in her lower left side of the abdomen, aggravated by bowel movement. Pain after bowel movement, lasting for a few minutes to half an hour. Constant pain and soreness if constipated. Not much mucous or blood in bowel movement. Pain is never severe enough for morphine. Three days is the longest free interval. Has pain especially at night after supper, relieved by recumbency on left side. Has been constipated for two months. Pain in back, both sides and up to shoulder blades, on both sides. No urinary symptoms. Is nauseated, but no vomiting. Has a great deal of gas with belching. Has lost 9 pounds in 3 months. Temperature is normal. Pain is worse when tired. Lifting is painful. Has frontal headaches. No "catarrh".

Examination:

B. P. S. 110 D. 90 Color pale.

Head: nasal polyp removed.

Eyes: (wears glasses which help her headache).

Teeth: dentistried. Gums good.

Throat: tonsils out. Pharyngeal reflex O. K.

Neck: O. K.

Lungs: rough breathing in both apices.

Heart: negative. Pulse 86, B. P. S. 110, D. 90.

Abdomen: tenderness in left side. Right side O. K. Hypersensitiveness of skin. Muscle splitting scar of appendectomy O. K.

Vaginal, not possible.

Rectal: negative.

Reflexes O. K. Skin: dermography.

Blood count: Hem. 85%: r. b. c. 4,880,000: index .8 plus: w. b. c. 14,000: polys. 73: s. lymph. 18: trans. 9. Wassermann negative.

Urinalysis: sp. gr. 1027: acid reaction: albumin present. No sugar or casts: mucous and epithelium increased.

Stool examination shows amoeba nana, many unidentified cells, some mucous blood.

Proctoscopic examination shows considerable congestion of the mucosa.

X-ray examination of the teeth, head and thorax and pelvic girdle were negative.

Barium X-ray examination of stomach showed no retention and was otherwise negative.

24 hour X-ray of gastro intestinal tract shows the colon normal with the exception of the lower portion of the descending colon where there is the appearance of redundency with distention and normal haustration.

48 hour X-ray shows considerable gas and Barium in the colon just above the brim of the pelvis.

Barium enema passes freely into an apparently normal, but redundant colon. Ileocecal valve is competent.

12-4-20 very satisfactory sigmoidoscopic examination revealed mucosa pale and oedematous, no definite ulceration. Considerable mucous and traces of blood. Fractional test meal at this time showed motility and acid curves within normal range.

Cystocopic examination with catheterization of ureters and X-ray failed to show stone, stricture or other abnormalities.

Patient was advised to go home and return after a month of rest, heat locally, oil enemata and a special diet.

She returned in January with the same complaint. Examination was about the same except for gurgling, tenderness, muscle spasm in the left iliac fossa.

Summary:

The clinical history fails to give one any definite idea as to the cause of the pain in the left iliac fossa.

The physical examination likewise fails to be of great benefit. Tenderness in left iliac fossa might mean sacro iliac disease or "strain", but the X-ray picture was negative and Goldthwait's sign was absent: Renal or ureteral stone, or stricture, were excluded by the X-ray and cystoscopic examination and the urinalyses.

Adnexal disease can not be demonstrated by quite satisfactory rectal bilateral palpation, the complaint is in no way associated with menstruation, her menstrual history is negative, and there is no leucorrhea:

Adhesions were not diagnosed because the patient had the same symptoms *before* her primary operation:

A so-called "hystero-genetic spot", which means little, but has been responsible for the removal of normal

ovaries, does not seem likely as the tenderness is not extreme, there is no superficial hypersensitiveness of the skin; the patient seems very cool, calm and collected, reflexes are not exaggerated and she does not present the usual appearance and action of a neurotic, with the possible exception of a marked vaso motor instability to be seen in the skin.

Pain and tenderness in the semilunar ganglion as described by R. T. Morris we have looked for many times, but have been unable to utilize Morris's spot to advantage in making abdominal diagnosis.

The diagnosis of left sided appendix should never be made now, since the X-ray Barium meal or cnema are available. I have seen two other recent cases erroneously diagnosed "left sided appendicitis" and nothing was found at the operation to account for the pain, the appendix was found at its usual location, was removed and after a temporary improvement the same left sided pain recurred.

Such diagnosis should not be acted upon without X-ray examination and consultations.

Disease of the sigmoid would seem the most likely explanation of her symptom.

The X-ray excluded diverticulitis, neoplasm or stricture, shows a redundant loop with some dilatation and a tenderness at the pelvic brim. The stool examination shows blood, excessive mucous, and many intestinal "amoeba" small in size fulfilling the description of "Endolimax nana" as described by Hegner and Cort.

The patient was advised that the diagnosis was most probably a colitis the cause of which was unknown. Rest with medical management was plainly indicated, but because of definite tenderness, pain and muscle spasm in the left iliac fossa, after two consultations, it was suggested that an exploratory laparotomy be made in the hope of finding some cause that might be remedied by surgical interference; although it was understood that medical treatment would be necessary after the operation, regardless of the findings.

The operation was a frank exploratory laparotomy with the object of finding, if possible, a cause for the pain in the left iliac fossa.

Operation, January 24, 1921.

Midline incision. The old scar was smooth, there were no adhesions.

The stomach, pylorus, duodenum, gall bladder, liver and pancreas all negative to touch. The right kidney was quite movable, normal size and contour. Left kidney practically the same. Spleen normal, no glands in the mesentery, nothing to suggest peritoneal tuberculosis. Small amount of straw colored fluid in the cul-de-sac. Uterus normal size, both tubes and ovaries normal. Rectum normal. Sigmoid, omega loop redundant, its walls seemed a trifle thick and leathery, no adhesions. No evidence of mucosal ulceration, no diverticulitis. The junction of the sigmoid loop and descending colon was firmly anchored to the posterior abdominal wall, but we were unable to detect any induration or new growth.

This "adhesion" was not interfered with, we have in the past in such cases followed the recommendation of Royster and performed a plastic operation, aiming to relieve such an obstruction, but the result has been such as to discourage our continuing such a manoeuver.

(Had this been carried out in this instance, the result would have been classed as a success; it is the lack of such cases as controls that is often deplorably lacking in current surgical and medical literature.)

The appendix had been previously removed. There were no adhesions at the site of the stump. Abdomen was closed in layers after opening the sheath of the opposite rectus muscle.

The post-operative diagnosis was "colitis". She was given emetin and Ipecac during her stay in Hospital. She made a very satisfactory immediate recovery and to date, 9 months later, has been relieved of her symptoms.

(In a report received since the above was written there is no return of symptoms.)

Because of the fact that this patient was relieved of her symptoms for 2¾ years after the previous operation, we must be very slow in giving credit to any treatment operative or non operative, carried out at this time.

One of the most striking common features of her two "cures" is rest in bed for a period of over two weeks, which I am inclined to believe is a most important factor in many so-called cures of obscure abdominal complaints.

A very interesting finding in this case, is the presence of amoeba in the stool. These were found in warm stool examination which we now make as a routine in all chronic or doubtful abdominal cases. The question of their significance and their importance as an etiological factor is unsettled, but calls for elucidation.

Suffice it to say at this time, that there are certainly many cases of obscure abdominal pain, tenderness or distress with gas and usually constipation, and diarrhea more rarely, in which parasites are found. And after their removal the symptoms disappear, for a time at least.

There are other cases in which these parasites are found in the stool, without any such symptoms. These conflicting findings leave very much to be learned regarding parasites and their clinical significance.

Great difficulty will be found in differentiating between the benign or inocuous or commensal type, the amoeba coli, and the amoeba histolytica, which is acknowledged to be pathogenic.

Theoretically the differentiation is easy and definite as may be seen in the following table from "diagnosis of protozoa and worms parasitic in man", by Hegner & Cost. Waverly Press, Balt, Md., 1921.

Distinguishing features of motile stages of intestinal amoeba of man.

Characteristic.	Entameba Histolytica.	Entamoeba Coli.	Endolimax Nana.
Size	Small, 5-30 microns.	Larger, 10-30 microns.	Very small, 5-15 microns.
Ingestion of corpuscles	Common.	Rare.	Rare.
Shape in motion	One pseudopodium protruded in direction of movement.	One pseudopodium protruded in direction of movement.	One or more small blunt pseudopodia at one time.
Locomotion	Active; pseudopodia protruded explosively.	Sluggish; pseudopodia formed by flowing out slowly.	Sluggish in formed stools: rapid in liquid stools.
Appearance	Ectoplasm strongly refractile; endoplasm finely granular.	Ectoplasm small in amount; less refractile; endoplasm vacuolated.	Ectoplasm very clear and refractile.
Stained in ironhoemotoxylin	Chromatin; a small central granule, and many small granules on nuclear membrane.	Chromatin; a larger central granule often eccentric, and many large granules on the nuclear membrane.	Chromatin: no central granule: a large mass and one or more smaller masses.

But when one finds both types in the same case, and where one finds the pathogenic type in cases *without* symptoms; and the non pathogenic type in cases *with* symptoms of colitis, the difficulty that is met with in attempting to study these amoeba may be appreciated. Suffice it to say that the significance of intestinal protozoic parasites is as yet undetermined.

The statement that Amoeba Coli do not produce symptoms, demands that we call attention to the fact that differentiation between Amoeba Coli and Amoeba Histolytica is, practically, quite uncertain: and that this statement was made by investigators in tropical diseases who, in all probability, meant by no symptoms, diarrhea or the symptoms of dysentery.

That such organisms might be the cause of symptoms other than dysenteric is a fruitful field for investigation.

The subsequent developments in this case will be watched with interest.

CLINIC OF DR. L. M. WARFIELD AT MILWAUKEE COUNTY HOSPITAL.

Recently there have been in my clinic at Milwaukee County Hospital two cases of small boys both of whom were sent in with diagnosis of meningitis. One was found to have meningitis of a rather unusual type. The other had meningism but not meningitis. In the first case the laboratory was the deciding factor in making the diagnosis. In the second case the laboratory only confirmed what was already known.

Case 1. A little Italian boy of five years was brought to hospital on May 12th, 1921, with the complaint of meningitis.

The illness had begun suddenly three days previously with severe headache and lassitude, loss of appetite and vomiting. He had previously been a healthy boy.

He lay in bed on his side with his knees drawn up, eyes closed, apparently in no pain. The pupils were equal and reacted to light and accommodation. There was no strabismus but marked photophobia. Glands of neck were palpable, pharynx reddened, tongue coated and dry. The neck was rigid and retracted. The lungs, heart and abdomen were negative except for tumor due to distended bladder. The pulse was regular, equal in both arms, 120 to minute. Kernig's sign was not present. All reflexes were increased. The temperature was 101.8; leucocytes 12,100; differential count revealed 71 per cent polys; urine negative.

On admission, spinal puncture was at once done and sent to laboratory. The fluid was clear and under considerable pressure.

Next day an attending physician considered it meningitis of meningococcus origin.

I saw him the same day. There was then slight weakness of the left 6th nerve. He was not lethargic, he resented handling. The neck was quite rigid and there was a marked bilateral Kernig's sign. The pulse was regular. I thought that the most probable cause was tuberculosis. The onset was acute, to be sure, but that not infrequently happens. The age of the child, the blood and spinal fluid findings and the exceeding commonness of this disease all fitted the picture. One factor was not there, viz: the report on the spinal fluid. It might be syphilitic meningitis. It could not be any of the pus cocci meningitides because in the three days from onset the spinal fluid was still clear.

We were the more confirmed in our opinion that it was tuberculous meningitis because a specimen of spinal fluid obtained on the day of admission showed no organisms in smear and no excess of cells. (The fluid was accidentally contaminated with blood, so no accurate cell count could be made.)

The matter was settled by the laboratory. A four plus W. R. was found in the fluid. That not only changed the diagnosis but also the prognosis. Tuberculous meningitis almost invariably is fatal, acute

syphilitic meningitis is practically always recovered from when proper treatment is instituted.

This boy was put at once upon KI and mercury. His fever came down by lysis to normal within a few days, his neck became normal, the leg signs vanished and the boy left the hospital apparently having perfectly recovered. He was sent to the Out-Patient Clinic for further treatment.

Case 2. A well nourished Polish boy of eight years was brought to hospital, May 24th, 1921, with the diagnosis of meningitis. The mother said that suddenly three days before he was taken with severe pains in the head, back and abdomen. He fell to the floor, had a chill alternating with fever. He did not vomit nor did he lose consciousness. He had always been a healthy, sturdy boy.

When seen by the Interne he appeared acutely ill. The temperature was 105, pulse 125, respirations 48. There was no cough, no dyspnea, no cyanosis. The boy was very irritable. He lay with his head retracted and his legs flexed. The Interne made out rigidity of neck, Kernig's and Brudzinski's signs with absent knee jerks. Pupils were equal and reacted normally. There were no ocular palsies. He had reason to suspect meningitis so he made a spinal puncture, obtained clear fluid under practically no pressure, but gave the boy 15 c. c. of anti-meningitis serum. The first thing next morning the leucocytes were counted; they were 21,-400.

When I saw the boy, the morning after admission (May 25), he was conscious, the eyes had a heavy look, the lids were slightly reddened. The pupils were equal and reacted normally, no ocular palsies were noted. Respirations were rapid but quiet. There were herpetic vesicles on the upper lip, the tongue was heavily coated. The throat was reddened. Suspecting that there must be a pneumonia from the herpes and the rapid respirations, the lungs were very carefully examined and a small area of slight dulness and slightly increased breath sounds were found in upper right axilla and under the upper right scapula. This could easily have been overlooked. There was no cough. The heart and abdomen revealed no abnormalities.

He was sent to the X-ray room where a plate of the chest was made. The report was "Definite shadow, fairly dense and uniform in right apex. May be pneumonia, lungs elsewhere negative".

The boy ran a very irregular temperature. On the 28th he appeared to have a crisis. It was a precritical remission, for the temperature rose and then fell on 29th to normal where it remained two days. Then a rise to 101 occurred and he had slight fever for about a month with exceedingly slow disappearance of the lung signs. In the meantime he complained of pain in the hips and knees. He resisted any movement at the hips and lay for most of the time with the knees almost touching the chin. Frequent examinations and X-ray plates showed nothing. He gradually was persuaded to get up, he recovered completely the use of his legs and left the hospital well on July 16th, 1921.

DISCUSSION.

The first case brings forcibly to our attention the fact that syphilitic meningitis may begin acutely, may attack children and is accompanied by fever and leucocytosis of the polymorphonuclear variety. Before the days of the complement fixation method applied to spinal fluids, it would have been almost impossible to rule out tuberculous meningitis. It is often impossible to find the tubercle bacilli in the spinal fluid and guinea pig inoculations is a long-drawn-out method. Possibly some of the recoveries from tuberculous meningitis reported in the literature in the pre-Wassermann days were cases of syphilitic meningitis. The lesson this case teaches is that when the spinal fluid is obtained, examination is not complete without the Wassermann reaction.

Of the other case, the pneumonia with meningeal irritation, we have had several similar ones. Typical pneumonia can and does occur without cough or pain in the side or definite signs in the lungs. Always one may be suspicious of pneumonia when the respirations are above 36 per minute. Then on examining the lungs take particular pains. Do not always expect dulness, tubular breathing, crepitant rales. You will not find them. All you may find at the first examination is in one or the other inter-scapular region; or high up in one axilla a small area 2-4 cm. in diameter where the percussion note seems a bit impaired, where the breath sounds have a faint suggestion of bronchial breathing or even seem suppressed, and where whispered voice sounds are increased. That, to my mind, is the most important sign. Then on percussion of the upper fronts one will show marked hyper-resonance to almost tympany while the other will be normal in tone. It has been my experience that wherever one gets the so-called Skodiac resonance over the upper front, that there is fluid or consolidation posteriorly on that side. This boy had this sign and the diagnosis of pneumonia was confirmed by X-ray and by subsequent examinations.

It would appear that pneumonia affecting the apex of the lung is more prone to produce symptoms of meningitis than pneumonia elsewhere in the lung.

Herpes labialis is found in simple febrile conditions (febricula), pneumonia, meningitis, malaria. It can be safely affirmed that any previous-

ly healthy young adult in this part of the world who is suddenly taken with an illness giving herpes libialis and rapid respiration, has pneumonia in spite of the absence of cough, pain, and physical signs in the chest.

CLINIC OF DR. GEORGE FAHR.

UNIVERSITY OF WISCONSIN.

MADISON.

A student aged 20 entered the University Clinic complaining of feeling tired and lacking in "pep". States that he has noticed these symptoms gradually increasing in severity for about three weeks and attributes them entirely to intensive training for a swimming race. Has had night sweats for the past two weeks. His past history is essentially negative. The physician having noticed an enormous swelling suggestive of Hodgkins Disease in the right neck and a smaller one in the left neck, questioned at once as to how long the patient had noticed this swelling. The patient then stated that he had noticed it about seven days previous to coming to the clinic and that he had been assured by a physician that it was of no consequence and would soon go down.

Examination in the clinic revealed a well nourished and well developed young male with the appearance of marked degree of lassitude. There was puffiness about the eyelids. The mucus membranes of the throat were congested. The tonsils were congested and at the upper pole of the right tonsil there was a very small ulcer. Heart and lungs were essentially negative. The liver came down just below the rib margin in the medioclavicular line and the spleen was felt 4 cms. below the rib margin on deep inspiration. Anterior and posterior cervical glands on the right side were very large, somewhat tender, non adherent and not hard. The anterior and posterior cervical glands on the left side were also enlarged but less than on the right. There were enlarged glands in the supraclavicular fossae, in the axillae and in the inguinal region. The right epitrochlear was slightly enlarged also. A leucocyte count revealed 17,500 white cells of which 24% were polymorphs, 62% were normal lymphocytes, and 14% large mononuclears. Perhaps as many as one-fifth of these large mononuclears were of the ordinary variety. The majority were of a type only rarely seen in normal blood. At first we wished to classify them as large lymphocytes but somewhat later, discussion with one of our colleagues convinced us that they were not the ordinary large lymphocyte, but resembled Turk's irritation forms as much as any other type of cell. Recently they have been classified as lymphoblasts. The nucleus stained deeply violet with Wright's stain, was round or oval and usually centrally placed. A wide rim of deeply blue staining non granular photoplasm surrounded the nucleus. These cells were larger than the normal type of large lymphocytes and had a larger rim of protoplasm. The nucleus was darker than that of the myeloblast.

The diagnosis of acute lymphatic leukeamia was made in the clinic and the boy advised to go to the hospital. His temperature in the clinic was 98.8 but went up to 101.2 the first evening in the hospital. The history of night sweats makes it certain that there had been fever before this. An eminent hematologist was called in in consultation, the diagnosis of acute lymphatic leukaemia was confirmed, and the parents of the boy told that the disease was fatal.

After the first day in the hospital the temperature remained normal and we were pleasantly surprised to find that our hopeless prognosis was very far from correct, for the patient continued to improve and within five weeks the leucocyte count went down to 10,000, the relative number of lymphocytes dropped to 40% and the peculiar mononuclears were only present in small numbers. The size of the lymph glands became progressively smaller and the patient assured us that he was feeling fine.

The last time we saw the patient, 5 months after his first appearance at the clinic, he asserted that he was feeling very well. The leucocyte count was 13,000 of which 59% were polymorphonuclear leucocytes and 40% were mononuclear cells. Most of the mononuclear cells were normal lymphocytes and normal types of mononuclears and transitionals. There were still a few of the peculiar large mononuclear cells and the lymph glands in the neck and in the inguinal region were not entirely reduced to the normal size.

There is no question in our minds that we were dealing with what Sprunt and Evans[1] have re-

cently described as acute "infectious mononucleosis" and Bloedorn and Houghton[2] as acute "benign lymphoblastosis", and not with an acute lymphatic leukaemia, although the blood picture at our first hasty examination in the out patient department seemed typical. In fact in our opinion it is not at all easy to make the differentiation from the blood picture alone. In "infectious mononucleosis" there are very few fragile cells to be found and therefore few "smudges", the red-cells are practically normal and the total white count is much lower than in acute lymphatic leukaemia. There is always a marked reduction in the hemoglobin in lymphatic leukaemia when the total white count reaches figures comparable to those found in this condition. But it is the clinical appearance that is of most value in differentiating this condition from acute lymphatic leukaemia. The general condition of the patient in acute lymphatic leukaemia is much severer resembling that in secondary sepsis. There is a marked hemorrhagic diathesis accompanying it with bleeding from the nose, gums and tonsillar ring and into the retina and skin. There is also always a marked anemia and pallor. Both lymphatic leukaemia and infectious mononucleosis are usually associated with angina often of an ulcerative type. Our first case of acute lymphatic leukaemia seen with Professor Sahli of Berne entered the hospital as a case of sore throat and developed the blood picture and glandular enlargement apparently in the clinic under our eyes. During the first two or three days there was little in the clinical condition to contrast it with the case we are here describing. But instead of getting better the acute lymphatic case went on rapidly to exitus in about 20 days. The blood picture as well as the clinical course became progressively worse also. But the blood picture early in the disease was remarkably like that in our case of "infectious-mononucleosis." We do not wish to theorise in this paper which has been presented merely for the purpose of calling the attention of the busy practioner of Wisconsin to this condition of upper respiratory infection with fever, malaise, generalised lymph gland enlargement, splenomegaly and a blood picture closely resembling that found in acute lymphatic leukaemia, but it is hard to restrain the thought that there must be acute lympatic leukaemias of transient and non-malignant character.

The fact that the physician whom this boy first consulted gave a more accurate prognosis without the aid of a blood examination than we did with its aid is no argument against routine blood examinations in all cases of glandular enlargement. The case might very well have been acute lymphatic leukaemia or it might have been Hodgkins Disease. The error which we made in giving a fatal prognosis was due to the fact that we did not defer our prognosis until we had studied the case for three or four days. Within this period it would have become evident that the disease was not fulminatingly progressive as acute lymphatic leukaemia always is but was slowly retrogressing or stationary.

One case studied at the Johns Hopkins Hospital has remained well now six years after the acute symptoms developed. We know of one other case which has gone longer without any indication that acute lymphatic or chronic lymphatic leukaemia or Hodgkins Disease is going to develop. Therefore the patients may be assured a good outcome provided the disease does not get progressively worse but recedes after a few weeks. As a rule these patients are sick about three weeks with fever and malaise and then with a return of temperature to normal the general condition becomes good. At the same time the glandular enlargement which may reach its height about the time when the temperature is approaching normal may last for many months after the acute stage. The increase in lymphocytes and the pathological mononuclears may be part of the blood picture months after the patient's general condition has been normal but eventually the blood picture returns to the normal. The condition of infectious mononucleosis is undoubtedly more widespread than supposed and now that attention has been called to it we may all hope to find a case now and again.

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[1]Sprunt and Evans; Mononuclear Leucocytosis in Reaction to Acute Infections. Bulletin of The Johns Hopkins Hospital. XXXI. 410, 1920.

[2]Bloedorn and Houghton; Occurrence of Abnormal Leucocytes in Acute Infections, Archives of Internal Medicine. 27, 315, 1921.

CLINIC OF DRS. T. W. AND A. R. TORMEY,

MADISON.

PERINEPHRITIC ABSCESS.

CASE 1, is a young man, age twenty-five, who came into the hospital complaining of severe pain in the region of the left kidney which was fairly well localized. He gives a history of having no less than thirty carbuncles and furuncles distributed on all parts of his body during the past nine months. There is no history of any other serious sickness and he has never undergone a surgical operation.

The present trouble started about five weeks ago when he first noticed a severe pain in the left kidney region which was followed shortly by a chill and a temperature of one-hundred four. The pain did not radiate in any direction and it was so severe that it was necessary to give him a hypodermic of morphine. There were no urinary or gastro-intestinal symptoms, but he has lost about thirty pounds in weight in two months. His past history is negative.

Physical Examination:

A young man of twenty-five years, well developed, but rather poorly nourished, complaining of pain in the left kidney region. His cheeks are drawn, and he appears to be suffering considerably. P. 98, T. 101½, R. 22.

Head: Scalp well covered with brown hair. Pupils regular and react to light and accommodation. Nose and ears negative. Teeth in good shape. Tonsils small and buried. No adenopathy.

Neck: Negative.

Chest: Percussion note is everywhere resonant. Breath sounds clear and distinct. No rales.

Heart: Apex beat in fifth inter-costal space in nipple line. Sounds clear and distinct. No bruits.

Abdomen: Below the level of the costal margin. There is no rigidity or masses, and the kidneys cannot be felt. On palpating in the region of the left kidney, however, there is marked tenderness over a small area immediately below the twelfth rib in the posterior axillary line. The Murphy fist percussion over this area is strongly positive.

Extremities: Knee kicks present and active. No Babinski or Kernig.

Laboratory Reports:

Blood:

Red blood cells, 4,900,000.
White blood cells, 26,000.
Hg., 85%.

Second: Perinephritic Abscess.

Differential P. M. N. 90, S. M. 8 T. 2. Wassermann: negative.

Urine:

Color: Amber.
Reaction: Acid.
Albumen: None.
Sugar: None.

Microscopic: Few epithelial cells. No blood cells or casts.

Blood Pressure:

Systolic, 120.
Diastolic, 80.

Cystoscopic:

The scope passed easily and the bladder capacity was normal. The ureteral orifices were normal and cathethers passed without difficulty on both sides. The urine was clear from both sides, but the functional test on the left side was less than normal. A pyelogram showed a normal pelvis, but there was some increase in the outline of the left kidney itself.

A tentative diagnosis of left perinephritic abscess was made and this was confirmed following a diagnostic puncture in that region from which about 2 c. c. of a very thick yellowish pus was obtained. A culture of the pus showed it to be a mixed streptococcus and staphylococcus infection.

Operation: The usual lumbar incision was made and a large abscess was found surrounding the upper pole of the kidney. This was drained and the incision closed.

The patient continued running a septic temperature although he was draining a large amount. Seven days after the operation he had a chill and his temperature, which had been reaching one-hundred two every afternoon, went up to one-hundred four, and pus appeared in the urine. He was cystoscoped the next day and the pus was found coming from the left kidney. Ureteral drainage of the infected kidney was carried out for eight hours followed by instillation of 1% Silver nitrate.

Third: Perinephritic Abscess.

The patient felt much better, his temperature dropped to normal in three days and remained that way. He made a rapid convalescence and in three weeks after leaving the hospital gained thirty-eight pounds.

The interesting part of this case is in following the line of infection. There is no doubt but what it was secondary to the numerous furuncles and carbuncles he had, and that the cortex of the kidney developed a small abscess from organisms carried there by the blood stream and that this cortical abscess ruptured into the perinephritic sac and caused the abscess. After drainage had been instituted the pus sac was emptied, but the cortical abscess continued to increase in size until it ruptured into the pelvis following which, pus appeared in the urine. After cystoscopic examination with ureteral drainage and instillation of silver nitrate into the pelvis of the kidney, the pus disappeared from the urine and the temperature and pulse dropped to normal.

HYPERNEPHROMA.

This man first came to us in May, 1920, complaining of hematuria. He stated that he was forty-six years of age, married, had several children, and until nine

years ago had been a farmer, but was now a motorman for the city railway.

He first noticed a slight hematuria in February and again in May, 1917. The urine was slightly tinged with blood at these times but as it was present for only a few hours, he did not consult a physician about

Fig. I. Case No. 27204. Hypernephroma kidney. Shows irregular nodules of tumor breaking through the capsule of the kidney.

it. He was perfectly well then until May, 1920, when he again noticed blood in his urine which persisted the entire day. He continued working, and in August, 1920, had hematuria for one week. At this time the blood clots obstructed the urethra and it was necessary for him to be catheterized and irrigated. From August, 1920, until March, 1921, he had attacks of hematuria about every four or five weeks varying from a few hours to several days. The attack in March was of a week's duration and the most severe one he had. During all this time, however, he had no pain, frequency or nocturia. His one and only symptom was intermittent hematuria of varying degrees.

His family and past history are unimportant.

Physical Examination:

Well developed and well nourished male in middle life. Height is five feet, seven inches; weight, one hundred seventy pounds.

Head: Hair is slightly grey. Pupils react to light and accommodation. Nose and ears negative. Teeth in good condition. Tonsils, small and buried.

Neck: Negative.

Chest: Percussion note is everywhere resonant. Breath sounds clear and distinct. No rales. Heart is not enlarged. There are no murmurs. Sounds are clear. Pulse is seventy-two, strong, regular, and easily compressible.

Blood Pressure: Systolic 130; diastolic 90.

Abdomen: Just above the level of the costal margin. Liver extends one finger breadth below the ribs. There is no rigidity or tenderness. The left kidney is enlarged, somewhat irregular in shape and easily palpable. The right kidney is not palpable.

Genitalia: Normal.

Rectal Examination: Sphincter in good tone. Prostate is normal in size, shape, and consistency.

Extremities: Reflexes present and active.

Laboratory Reports:

Urine:

Color: Straw.
Reaction: Acid.
Sp. Gr.: 1016.
Sugar: None.
Albumen: None.
Microscopic: A few red blood cells.

Blood:

R. B. C., 4,100,000.
W. B. C., 7,800.
Hb., 85.
Differential P. 72, L. 24, T. 4.

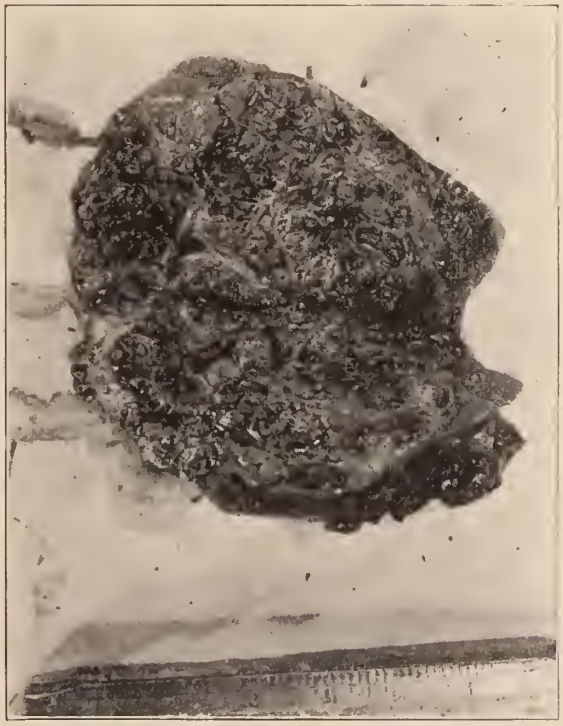

Fig. II. Case No. 27204. The entire kidney tissue is replaced by the new growth, which has broken through the true capsule of the kidney, and extended peripherally. The honey-combed structure is characteristic of hypernephroma.

Cystoscopic Examination:

This patient was cystoscoped by one of us in August, 1920, after a rather severe hemorrhage. At that time a blood clot could be seen protruding from the left

orifice and it was impossible to pass a cathether into the left ureter. The right kidney was functionating normally. He was urged to submit to an operation, but was feeling so well that he did not think it necessary.

He was again cystoscoped three days after his last severe hemorrhage had ceased and cathethers were passed into each ureter. The left kidney was functionless.

Phthalin output from the right kidney appeared in three minutes and forty per cent was collected in two fifteen minutes specimens.

A pyelograms showed a very small and irregular renal pelvis in the left kidney. The right kidney was normal.

A diagnosis of hypernephroma was made and as the patient was willing to submit to an operation a nephrectomy was performed.

The tumor was completely surrounded with greatly enlarged veins and there was considerable hemorrhage following the breaking up of adhesions and before the pedicle could be clamped. As shown in Fig. 1, the kidney was greatly enlarged and very irregular, measuring 14 by 8 cm.

Fig. II shows the kidney as it appeared when opened. The general color was the characteristic sulphur yellow with the typical honey-combed appearance of the tissue. The tumor was fairly well encapsulated, although it had broken through the true kidney capsule in numerous places. It had destroyed all the kidney tissue with the exception of a very small portion of the upper pole.

Discussion:

Hypernephroma is the most common of all malignant tumors of the kidney, but the etiology is still a subject of debate. Grawitz believed that the growths were of adrenal origin while Stoerk holds that they develop from regenerating convoluting tubules. Other authors maintain that they are of connectve tissue origin.

In the atypical case it is difficult to make a diagnosis as only fifty per cent have urinary findings. A blood clot in the ureter may cause an obstruction and give a typical picture of a renal colic.

Metastasis is by the blood, as a rule, and cases have been reported where the primary complaint was a varicocele due to the blocking of the spermatic veins; or edema of the lower extremities due to the blocking of the inferior vena cava. Almost any part of the body may become infected.

Michaelsson of Stockholm reports thirty cases operated on between 1896 and 1916, with the following results. Seven of them are alive, four died as result of the operation; six, from recurrence or metastasis during the first three years, and three, after three years. In the remaining ten cases death occurred from other diseases, five of the cases living, only one and one-half years after operation.

It is very essential to follow the nephrectomy with X-ray treatments. The rays seem to have a selective action for hypernephroma cells and the best results are obtained by combining the two methods of treatment.

The patient made an uneventful convalescence and was discharged from the hospital ten days after the operation. He was given six X-ray treatments by Dr. Curl, and returned to his work five weeks after his operation.

PREVENTIVE MEDICINE

Edited by
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SOME OBSERVATIONS ON THE PREVENTION AND CONTROL OF COMMUNICABLE DISEASES.*

BY GIDEON BENSON, M. D.,
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The importance of the subject of communicable disease is made evident when one considers that 70% of the deaths in the United States are due to contagious diseases and that the majority of such contagion originates in school. According to reliable authority about 11,000 children die each year in the United States of scarlet fever, 10,000 of whooping cough, 900 of measles, to say nothing of the 200,000 that die each year of tuberculosis, a number that far exceeds the loss of the A. E. F., during the entire campaign in all their fighting force.

Any disease which kills 10,000 children in a year is a serious menace. If we were to have as many children die from some disease with which we are unfamiliar as cholera or the plague the whole country would be very much disturbed. As in the case of summer diarrhea the familiarity with the disease and with the deaths resulting from it has lead to a spirit of tolerance and things that we have gotten used to we think we cannot change. When every community in Wisconsin realizes that an efficient health department is as much a public necessity as an efficient fire department or police department we shall have advanced a very long way in our fight against contagious disease.

As an aftermath largely due to contagious disease we found in the examination of the draft that 35% of the drafted men were unfit for military

*Read at the County Health Conference, held in Richland Center, August 20, 1921.

service and were rejected on first examination. Another 15% were rejected after entering service so that about 50% of the young men of the country were found unfit for military service. The analysis of such statistics show us that disease is the greatest burden upon the community and the greatest destroyer of the nations resources, for the health of the people is the greatest resource or asset of any nation.

The tragic part of the loss of life, and health, and well being from disease, especially that of contagious disease, is that it might be prevented by instituting preventive means which are well known. When one considers the small amount per capita that the country expends for hygiene and sanitation we are lead to wonder how any progress has been made. In one hundred cities of the United States with populations ranging from 20,000 to 30,000 the expenditures per capita per annum for health and sanitation ranged from $1.43 to $2.76. If this is the price paid by such cities as Madison, Wis., what must be the expenditure per capita of the rural districts which have practically no public health administration.

It has been estimated that in the United States 300,000 children die annually during the first year of life and it has been calculated that 40% of this death rate is due to preventable diseases. This would represent a loss of 125,000 children each year from preventable diseases. The allottment of this state would be something like 2,400 and of this Richland county now has an average annual death rate of 50 during the first year of life. On the same basis we would be expected to save 20 more babies each year by using our resources for combating preventable diseases. This emphasizes the need of suitable remedies and at this time of a greater effort being made through the study of public health measures for the protection and maintenance of individual health.

The most logical means of continuing the progress made in public health administration during the period of the war is by coordinating the forces instituted for promoting public health and developing them into one organized propaganda or campaign. In this campaign should be enlisted the interest of all public health officials, public health nurses, physicians and social workers. Physicians and public health workers have been very remiss in their duty toward the public, in that practically no effort has been made to inform the public and interest them in matters of personal health, hygiene and sanitation. It is true a propaganda has been carried out to some extent throughout the country against tuberculosis, cancer and infant mortality. These efforts have produced far-reaching results and far out of proportion to what might have been expected for the efforts put forth.

In our schools we have our departments of agriculture, domestic science, business, and athletics; but nothing in a direct way toward promoting or teaching public health measures and sanitation. Undoubtedly the time is near at hand when the teaching of the fundamental principals of healthy living and prevention of communicable diseases will be a regular part of every school curriculum. By what ever method we finally decide to care for the health of the community the fundamental proposition upon which it is based must be that the public health is a public concern and should be looked upon as the greatest community asset.

In some communities the rather vague field of public health work has been carried on by associations known as Community Centers., Community health centers, or simply health centers. This is an organization which consolidates, administers and increases the efficiency of public health relief, welfare, and charitable work in the community. This is accomplished in a measure by conducting popular education in hygiene and sanitation, examination of school children, follow up work of the community nurse, or school nurse, elimination of duplication and overlapping in the relief work, and social service agencies in the community, maintenance of public clinics and establishment of complete scientific laboratories.

The consolidation of these functions could not be brought about in a short time but better health instruction could be begun in the public schools by a school nurse and better ideas on the subject of infectious diseases could be given to mother's clubs in the neighborhood by the nurse.

The benefits and advantages of public health propaganda in certain diseases are illustrated by the work of Dr. Bloodgood of Baltimore, who for several years, has been conducting an educational campaign on the advantages of early diagnosis and treatment of cancer. He makes the statement that in five years the incidence of inoperable cases which came to the hospitals in the east had

been reduced more than 50%. The importance of this is all the more emphatic when it is remembered that the cause of one eighth of the deaths in women over 40 years is due to this disease.

If parents generally knew that contagious diseases are more fatal in children under 5 years of age (90% of the deaths from whooping cough, for instance, occur in children under 5 years of age) very few would expose their children to infection with the idea of having it over with. With a knowledge of this fact no sane person would knowingly expose children to a contagious disease. Most people know that diphtheria and smallpox are very dangerous contagious diseases; but very few are aware that we lose more children from measles than from smallpox and far more from whooping cough than from diphtheria.

The opposition to compulsory vaccination against smallpox would be very negligible if it were generally known that by its use in many countries the fatalities from the disease have been reduced from an almost universal plague to practically nothing.

In England the fatalities were reduced in fifty years from about 6,000 deaths annually to five or six. In Germany where all children are required to be vaccinated before they enter school, the disease has been practically banished.

The value and economy of vaccination in the control of smallpox is well illustrated by the experience of two Michigan cities in 1911. In Saginaw, where there was a severe epidemic, the city spent $75,000 in combatting the disease, in addition to losing many citizens from smallpox. In Grand Rapids the city spent $2,700 for vaccination and not a single case occurred in the city.

The value of vaccination, serums and antitoxins in the different diseases in which these measures have been found effective, should be made clear and plain; then very few people will hold out against them. A nurse who is generally well informed about these matters and who could not be accused of having any pecuniary interest in carrying out its application could most effectively explain its advantages. Regulations without interest on the part of the public are very inefficient.

Another very affective means of preventing the spread of disease in the school would be accomplished by the nurse calling at the home of each child absent from school and finding out the cause of such absence. If it is a case in which contagious disease is suspected she could see that proper measures were taken to prevent its spread, at least, until such time as is required to determine the real nature of the ailment. Most contagious diseases are spread through carelessness or indifference. It is important to teach parents to separate children from every sick person, young or old, until the nature of such sickness is definitely determined.

An alert nurse would be able to detect most cases of suspected contagious disease in the very beginning and thus begin preventive measures at a time when most effective in preventing an epidemic. This has occurred at different times with our own nurses in our city schools.

There is usually no difficulty in diagnosing most of these diseases and one who sees many cases could recognize suspicious symptoms and advise the parents regarding their isolation.

The board of education for Richland Center, influenced by the results of nurse service in former years, has considered it wise to engage the services of such a nurse for the coming year. Not infrequently the success of our schools has been brought to naught by the prevalence of contagious disease.

Parents cannot be expected in all cases to recognize the signs of contagious disease or to institute measures for the defense of others even when they know; and where quarantine is established it is of very little effect unless the families are made aware by instruction as to its purpose and its fairness, and are willing to cooperate in its maintanance. Hospitals would not trust the care of their infectious cases to nurses who have not spent several months doing such work in the wards under supervision.

A large part of this work of instructing in public health naturally falls upon the school nurse. The personnel of the health department is not large enough in the rural districts to meet the exigencies of the situation and medical men should be ready to do their part as occasion requires and cooperate with the agencies at work for better health conditions. Physicians should be ready to assist in making out a constructive program and to assist in every possible way of carrying it out.

A few hours spent in practical talks by physicians and nurses on every day health problems would do much toward stimulating interest in

health matters. It is now a well established fact that when people learn to appreciate the advantages of healthy living conditions they appreciate the medical and sanitary services accordingly and will consult the profession all the more freely.

When nurses send children to physicians as a result of their school examination they should be gone over very carefully and they should never be treated lightly or flippantly or the services of the nurse spoken or disparagingly. Even though some are sent in who are physically all right they should be gone over in the same thorough manner, for when we remember that about fifty per cent of our young men show some physical defect and had to be rejected from military service, the possibility of a few unnecessary examinations should not be used to discourage the entire plan.

At any rate all of the school children should be examined each year, for the per cent of defects is great enough to justify and demand such precautions. This necessity is made evident enough if one has an opportunity to see most any group of school children. This is the easiest and smallest provision that a district could make in preventing the spread of disease and in eliciting the cooperation of parents in corrective measures for defects which are brought to their attention.

The nurses are encouraged to work conscientiously when their referred cases are given careful consideration. A resourceful nurse working in the community can do more toward eliciting the cooperation of the population in public health measures than any other single factor.

Dr. Mendenhall, instructor in health in the Extension Division of the State University, says that the factor which Wisconsin needs most in reducing the mortality and morbidity of children is more visiting nurses.

Dr. Prince, while serving as chairman in the State Council of Defense, in Child Welfare Department, said, "Put a good public health nurse in every school in the state and you will have done more to solve the child welfare problem in Wisconsin than you could possibly do in any other way. We are gradually coming into a better understanding of the care and prevention of contagious diseases and should encourage a more rational manner of handling them in hospitals. Any of the communicable diseases, even the most contagious as diphtheria and scarlet fever may be easily and efficiently isolated in hospital wards for observation when suspected. Both these diseases are spread in one of two ways, by direct infection of the individual from the patient, and secondly by carrier or those who retain in their bodies the germs of the disease without actually having the disease, or who retain the germs for an unusually long time.

No argument is needed to make it clear that if the individual suffering from diphtheria or scarlet fever is isolated from the rest of the community there will be no new cases to take the disease from this particular patient.

Every patient with a contagious disease which is not properly isolated acts as a focus from which the disease may spread and each new case adds a point from which other cases arise. So, in spite of the efforts of physicians and health authorities, these diseases remain epidemic in all our large cities and for considerable periods of time in the smaller communities.

In providing a place for the care of contagious diseases by isolation the community would be acting in its own interest and the establishing of such hospitals would not be considered as doing any special thing for the individual suffering from the disease but would be taking the proper precaution toward keeping the rest of the community free from the disease.

It should be the duty of the health department in each municipality to remove cases of contagious diseases to a place where the rest of the community will not be in danger. This is particularly true, inasmuch as that part of the population which is in most danger from contagious diseases is composed of children, who must depend for their safety upon the judgment and management of their care takers.

SUMMARY.

1. We should have more emphasis placed upon eliciting the interest of all classes of people in public health measures by establishing classes to study public health measures and in directing the reading of wholesome public health literature, and by conference with the public health nurses and physicians.

2. Public health centers should be established in each county.

3. Community hospitals should be established with means for taking care of communicable diseases in the hospitals.

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Langlade	L. A. Steffen, Antigo	J. C. Wright, Antigo.
Lincoln	H. G. Hinckley, Merrill	A. R. Wittman, Merrill.
Manitowoc	A. M. Farrell, Two Rivers	V. V. Kellner, Maribel.
Marathon	R. M. Frawley, Wausau	M. L. Jones, Wausau.
Marinette-Florence	J. W. Boren, Marinette	C. H. Boren, Marinette.
Milwaukee	J. J. Seelman, Milwaukee	Dan. Hopkinson, Milwaukee.
Monroe	T. J. Sheehy, Tomah	L. H. Prince, Sparta.
Oconto	R. J. Goggins, Oconto	C. J. Ouellette, Oconto.
Oneida-Forest-Vilas	W. C. Bennett, Rhinelander	E. R. Boyer, Rhinelander.
Outagamie	N. P. Mills, Appleton	V. F. Marshall, Appleton.
Ozaukee	G. S. Cassells, Port Washington	A. A. Mesch, Saukville.
Pierce	C. A. Dawson, River Falls	Rollo Cairns, River Falls.
Portage	D. S. Rice, Stevens Point	F. A. Marrs, Stevens Point.
Price-Taylor	G. C. Nedry, Medford	G. C. Wichman, Rih Lake.
Racine	F. C. Christensen, Racine	Susan Jones, Racine.
Richland	H. C. McCarthy, Richland Center	G. Benson, Richland Center.
Rock	C. H. Sutherland, Janesville	E. B. Brown, Beloit.
Rusk	C. E. Bugher, Ladysmith	L. M. Lundmark, Ladysmith.
Sauk	D. M. Kelly, Barahoo	Roger Cahoon, Barahoo.
Shawano	W. J. Ragan, Shawano	E. L. Schroeder, Shawano.
Shehoygan	R. M. Nichols, Shehoygan	G. J. Hildehrand. Shehoygan.
St. Croix	E. A. Wright, New Richmond	W. H. Banks, Hudson.
Trempcaleau-Jackson-Buffalo	N. S. Simons, Whitehall	F. T. Weher, Arcadia.
Vernon	J. Christenson. Westhy	F. E. Morley, Viroqua.
Walworth	J. M. Marsh, Elkhorn	J. H. Young, Elkhorn.
Washington	H. F. Weher, Newhurg	A. H. Heidner, West Bend.
Waukesha	G. H. Perrin. Menomonee Falls	S. B. Ackley, Oconomowoc.
Waupaca	E. H. Jones, Weyauwega	A. M. Christofferson, Waupaca.
Winnehago	F. G. Connell. Oshkosh	H. W. Morgenroth, Oshkosh.
Wood	D. Waters, Grand Rapids	F. X. Pomainville, Grand Rapids.

SOCIETY PROCEEDINGS

CLARK COUNTY

The members of the Clark County Medical Society met at Owen, Wisconsin, October 6. After partaking of a sumptuous seven o'clock dinner at the Woodland hotel, the regular meeting took place at which officers for the ensuing year were elected as follows. President, Dr. S. Kyes, Owen, and Secretary, Dr. A. L. Schemmer, Colby. A lively discussion on various subjects of general interest took place after which Dr. S. E. Williams of Chippewa Falls read a very interesting paper on "Ectopic Pregnancy." It was decided to hold one more meeting before the winter season, to be held in Colby early in November.

A. L. Schemmer, M. D., *Secretary.*

GRANT COUNTY

The regular meeting of the Grant County Medical Society was held in the probate court room, Lancaster, Wednesday P. M., September 14, Dr. J. H. Fowler, president, presiding. The program consisted of the following papers of exceptional merit: A paper on "Addison's Disease, with Report of an Exceptional Case," by Dr. J. H. Fowler; "Roentgen Diagnosis," illustrated with lantern slides, by Dr. James W. Jackson, assisted by Dr. C. A. Harper, Madison. "Vertigo" was the title of a paper read by Dr. E. H. Brooks, Appleton, presenting some unusual diagnostic symptoms of this troublesome complaint. "The Surgical Treatment of Empyema, Complicating Pneumonia," was presented by Dr. W. Cunningham, Platteville, in a clear, forcible manner. Questions and discussion followed the reading of these papers.

M. B. Glasier, M. D., *Secretary.*

JEFFERSON COUNTY

The September meeting of the Jefferson County Medical Society which was held at the home of Dr. J. A. Keithley, Palmyra, was the type of meeting that the officers of the societies hold as their ideal. It was the type of meeting that should be the aspiration of every medical society.

The program, consisting of Dr. H. B. Hitz on "Present Status of Tonsillectomy," Dr. McRae on "Surgical Problems," and Dr. Dieterle on "Congenital Club-Foot and Its Treatment," speaks for itself.

The attendance of eighty per cent of the county membership is evidence of a professional interest manifested by the members. Not alone did the physicians go to Palmyra, but also the wives were there to spend a very pleasant afternoon with the most genial hostess, Mrs. Keithley. Five Hundred constituted the program for the ladies in which all shuffling was done above the table, a feature inaugurated by the "Lake Mills Trio." Why? I can't say.

After the rendition of the excellent program together with discussion, the president followed by the greatest of hosts, Dr. Keithley, led the guests to the smoking room where further intimate discussion followed, after which voracious appetites had to be appeased and here let me say, let none try to surpass Mrs. Keithley in knowing the route to a physician's heart for she has had experience with one for years. In brief conclusion, we want to go to Keithley's and Palmyra again.

H. P. Bowen, M. D., *Secretary.*

MILWAUKEE COUNTY

The regular meeting of the Milwaukee County Medical Society was held at the Hotel Pfister, Milwaukee, Friday evening, October 14th. Several interesting case reports were presented and discussed.

MILWAUKEE MEDICAL SOCIETY

The fall program of the Milwaukee Medical Society was opened with a clinical meeting, October 11, at the Health Service Building, Milwaukee. After a meeting of the Council, the following cases were presented and discussed: "A Case of Tuberculoma of the Stomach," Dr. Fred Stratton; "A Case of Glioma of the Brain," Dr. D. W. Roberts; "A Case for Differential Diagnosis Between a Functional and an Organic Heart Lesion," with presentation of patient, Dr. W. B. Ford; "A Case of Typhoid Bacilli Isolated from the Gall Bladder 32 Years After Infection," Dr. A. M. Dorr; "A Case of Pathological Fracture of Humerus with Presentation of Patient," Dr. P. F. Rogers, and "A Case of Pathological Fracture of the Neck of the Femur—Tabetic," by Dr. F. B. McMahon.

L. G. Sykes, M. D., *Secretary.*

NINTH COUNCILOR DISTRICT

The autumn meeting of the Ninth Councilor District Medical Society was held Friday afternoon and evening, September 30, at Wausau. A clinic on nervous and mental diseases was held at the County Hospital for Chronic Insane from two to five P. M. by Dr. Peter Bassoe of Chicago. Dinner was served at the Wausau Club at six-thirty, after which the following program was given: "Ocular Examination as an Aid to the Internist in Diagnosis and Prognosis," by Dr. L. A. Copps, Marshfield; "Chronic Back Pain," illustrated by lantern slides, Dr. M. L. Jones, Wausau, and "Encephalitis," illustrated by lantern slides, by Dr. Peter Bassoe, Chicago.

OUTAGAMIE COUNTY

The regular September Meeting of the Outagamie County Medical Society was held at Hotel Appleton, September 29, 1921, which was preceded by a dinner at 6:30 o'clock.

The literary portion of the program was filled by Dr. Holz, Seymour, who selected as his subject, "The Physiology of Two Important Endocrine Glands in the Human Body," and Dr. Shepherd, Seymour, who presented "Intestinal Affections With Report of Cases."

Both papers were most favorably received and generally discussed by all members present. The September Meeting of the Outagamie County Medical Society was marked by the largest attendance, there being 28 members present, of any preceding month for this present year.

V. F. MARSHALL, *Secretary.*

PRICE-TAYLOR COUNTY

The Price-Taylor County Medical Society held a meeting at the Medford Clinic, Medford, August 23, 1921. President Dr. G. C. Nedry conducted an operative clinic for three hours which was very instructive and enjoyed by all present. Dinner was served at the Fayette Hotel, after which a general discussion followed, relative to the value of the X-ray in fractures and gun-shot wounds. The meeting was considered by all present as one of the most instructive meetings the society ever held and those who were not present missed a real treat.

G. C. WICHMAN, M. D., *Secretary.*

ROCK COUNTY

The September meeting of the Rock County Medical Society was held in Beloit, September 27th. Dr. A. A. Strauss gave a splendid talk on "Gastric and Duodenal Ulcer," forty-five physicians being present to hear him.

E. B. BROWN, M. D., *Secretary.*

ASSOCIATION NEWS

PROGRAM.

Annual Assembly, Tri-State District Medical Association.

Milwaukee, Wisconsin, November 14th, 15th, 16th, 17th. Headquarters for general meeting and clinics: Auditorium, Fifth St., between State and Cedar Sts.

FIRST DAY.

MONDAY, NOVEMBER 14TH, 1921.

7 A. M.

1. Diagnostic Clinic (Medical).
   Dr. Frederick Tice, Professor of Clinical Medicine, University of Illinois, College of Medicine, Chicago, Ill.
2. Diagnostic Clinic (Surgical).
   Commander William Seaman Bainbridge, United States Navy, Medical Department, New York, N. Y.

Intermission.

3. Diagnostic Clinic (Medical).
   Dr. Charles P. Emerson, Dean and Professor of Medicine, Indiana University, School of Medicine, Indianapolis, Indiana.
4. Diagnostic Clinic (Surgical).
   Dr. Hugh Cabot, Dean and Professor of Surgery, University of Michigan, Medical School, Ann Arbor, Michigan.

Afternoon Session.

1 P. M.

5. "Carcinoma of the Esophagus and Its Treatment with Radium." (With pictures.)
   Dr. C. W. Hanford, Chicago, Illinois.
6. "Recent Advances in Chemistry as Aids in the Practice of Medicine."
   Dr. Harold C. Bradley, Professor of Physiological Chemistry, University of Wisconsin, Madison, Wis.
7. "Some Considerations of the Graham Steell Murmur."
   Dr. Frederick Tice, Professor of Clinical Medicine, University of Illinois, College of Medicine, Chicago, Illinois.
8. "Errors in Orthopaedic Diagnosis."
   Dr. Reginald H. Sayre, Professor of Orthopaedic Surgery, University and Bellevue Hospital, Medical College, New York, N. Y.
9. "X-ray Treatment of Carcinoma of the Breast."
   Dr. Arthur W. Erskine, Cedar Rapids, Iowa.
10. "Type and Treatment of Severe Anemia."
    Dr. Alfred Stengel, Professor of Medicine, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

Evening Session.

7 P. M.

11. "Recent Development in Tardy Malnutritions of Childhood."
    Dr. H. C. Blankmeyer, Springfield, Illinois.
12. "Some Aids to Diagnosis in Medicine."
    Dr. Henry Enos Tuley, Dean and Professor of Pediatrics, University of Louisville, School of Medicine, Louisville, Ky.
13. "Actinomycosis—diagnosis and treatment."
    Dr. Paul White, Davenport, Iowa.
14. "Hyperthyroidism."
    Dr. William E. Schroeder, Chicago, Illinois.
15. "The Treatment of Chronic Nephritis."
    Dr. Charles P. Emerson, Dean and Professor of Medicine, Indiana University, School of Medicine, Indianapolis, Ind.

SECOND DAY.

TUESDAY, NOVEMBER 15TH, 1921.

7 A. M.

1. Diagnostic Clinic (Pediatrics).
   Dr. J. Claxton Gittings, Professor of Pediatrics, University of Pennsylvania, School of Medicine, Philadelphia, Pa.
2. Diagnostic Clinic (Surgical).
   Dr. Arthur Dean Bevan, Professor of Surgery and Head of Surgical Department, Rush Medical College, Chicago, Illinois.

Intermission.

3. Diagnostic Clinic (Medical).
   Dr. Alfred Stengel, Professor of Medicine, University of Pennsylvania, School of Medicine, Philadelphia, Pa.
4. Diagnostic Clinic (Surgical).
   Dr. Reginald H. Sayre, Professor of Orthopaedic Surgery, University and Bellevue Hospital, Medical College, New York, N. Y.

Afternoon Session.

1 P. M.

5. "Hemorrhoids and Hemorrhoidectomies."
   Capt. A. M. Fauntleroy, M. C., U. S. Navy, U. S. Naval Hospital, New York, N. Y.
6. "Clinical Interpretation of Blood Chemistry Findings in Diabetes and Nephritis."
   Dr. Frank Wright, Chicago, Illinois.
7. "Tumors of the Breast."
   Dr. Arthur Dean Bevan, Professor of Surgery and Head of Surgical Department, Rush Medical College, Chicago, Ill.

Intermission.

8. "The Effect of Occlusion of the Coronary Arteries on the Heart's Action and it's Relationship to Argina Pectoris."
   Dr. Warfield T. Longcope, New York, N. Y.
9. "Memory Defect of Korsakoff Type Observed in Multiple Neuritis following Toxemia of Pregnancy."
   Dr. Frank A. Ely, Des Moines, Iowa.
10. "A Neglected Factor in Surgical Infections."
    Dr. Hugh Cabot, Dean and Professor of Surgery, University of Michigan, Medical School, Ann Arbor, Michigan.

Evening Session.

7 P. M.

11. "A Disease in Childhood Which Commonly is Unrecognized."
    Dr. J. Claxton Gittings, Professor of Pediatrics, University of Pennsylvania, School of Medicine, Philadelphia, Pa.
12. "Surgical Treatment of Fractures."
    Dr. John M. Dodd, Ashland, Wisconsin.
13. "Various Problems Met With in Fractures of Both Bones of the Forearm—Mechanically and Surgically" (lantern slides).
    Dr. Paul B. Magnuson, Chicago, Illinois.
14. "Grafts of Whole Substance Bone."
    Dr. John P. Lord, Professor of Orthopaedic Surgery, University of Nebraska, School of Medicine, Omaha, Nebraska.
15. Discussion of last three papers led by Dr. Reginald H. Sayre, New York, N. Y.
16. "The Thyroid Gland and Intestinal Stasis."
    Commander William Seaman Bainbridge, United States Navy, Medical Department, New York, N. Y.

THIRD DAY.

WEDNESDAY, NOVEMBER 16TH, 1921.

7 A. M.

1. Diagnostic Clinic (Surgical).
   Dr. Charles H. Frazier, Professor of Neurosurgery, University of Pennsylvania, School of Medicine, Philadelphia, Pa.
2. Diagnostic Clinic (Medical).
   Dr. Thomas McCrae, Professor of Medicine, Jefferson Medical College, Philadelphia, Pa.

Intermission.

3. Diagnostic Clinic (Surgical).
   Dr. William J. Mayo, Mayo Clinic, Rochester, Minnesota.
4. Diagnostic Clinic (Surgical).
   Dr. George Armstrong, Professor of Surgery, Faculty, McGill University, Montreal, Quebec.

Afternoon Session.

1 P. M.

5. "Goitre Work" (with movie film).
   Dr. Edwin P. Sloan, Bloomington, Illinois.
6. "The Surgical Aspect of Diverticulitis of the Colon." (Lantern slides.)
   Dr. William J. Mayo, Mayo Clinic, Rochester, Minnesota.
7. "The Problems of Intra Cranial Surgery Relating to Brain Tumors."
   Dr. Charles H. Frazier, Professor of Neurosurgery, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

Intermission.

8. "A Treatment for Chronic Malign Diseases of the Superficial Lymph Glands."
   Dr. J. L. Yates, Milwaukee, Wisconsin.
   (a) Laboratory aspect: Dr. C. H. Bunting, Madison, Wis.
   (b) Surgical aspect: Dr. W. J. Mayo, Rochester, Minn.
   (c) Medical aspect: Dr. Frederick Tice, Chicago, Illinois.
   (d) Roentgenological aspect: Dr. Otto H. Foerster, Milwaukee, Wis.
9. "Symptoms and signs of foreign bodies in the Bronchi."
   Dr. Thomas McCrae, Professor of Medicine, Jefferson Medical College, Philadelphia, Pa.
10. "Foreign Bodies in the Air Passages from the Viewpoint of the Roentgenologist."
    Dr. Willis F. Manges, Professor of Roentgenology, Jefferson College, Philadelphia, Pa.

Evening Session.

7 P. M.

11. "Surgical Aspects of Uterine Malposition."
    Dr. Joseph A. Pettit, Professor of Surgery, University of Oregon, School of Medicine, Portland, Oregon.

12. "An Interesting Intestinal Case."
Dr. George W. Koch, Sioux City, Iowa.
13. "The Program of the American College of Surgeons."
Dr. Franklin Martin, Chicago, Illinois.
14. "Non-tuberculous Pulmonary Infections."
Dr. John H. Peck, Des Moines, Iowa.
15. "A Critical Study of an Organism Associated with a Transplantable Carcinoma of the White Mouse."
Dr. John W. Nuzum, Chicago, Illinois.

SMOKER.

FOURTH DAY.

THURSDAY, NOVEMBER 17TH, 1921.

7 A. M.

1. Diagnostic Clinic (Medical).
Dr. Warfield T. Longcope, Recent Professor of the Practice of Medicine, Columbia University, College of Physicians and Surgeons, New York, N. Y.
2. Diagnostic Clinic (Surgical).
Dr. George W. Crile, Professor of Surgery, Western Reserve University, School of Medicine, Cleveland, Ohio.

Intermission.

3. Diagnostic Clinic (Medical).
Dr. Henry A. Christian, Hersey Professor of the Theory and Practice of Physic, Harvard University, School of Medicine, Boston, Mass.
4. Diagnostic Clinic (Surgical).
Professor H. C. Jacobaeus, Serafiner Hospital, Stockholm, Sweden.

Afternoon Session.

1 P. M.

5. "Role of Ovary in Pelvic Surgery."
Dr. William P. Graves, Professor of Gynecology, Harvard University, School of Medicine, Boston, Mass.
6. "Variations in Abdominal Viscera as found in the Anatomical Laboratory of the State University of Iowa."
Dr. Henry J. Prentiss, Iowa City, Iowa.
7. Subject announced later.
Dr. George W. Crile, Professor of Surgery, Western Reserve University, School of Medicine, Cleveland, Ohio.
8. "A Consideration of the Basal Metabolic Rate in Surgical Treatment of Diseases of the Typhoid Gland" (illustrated).
Dr. Reginald H. Jackson, Madison, Wisconsin.

Intermission.

9. The Relation That Exists Between Hypertension, Myocarditis and Nephritis."
Dr. Henry A. Christian, Hersey Professor of the Theory and Practice of Physic, Harvard University, School of Medicine, Boston, Mass.
10. "Physiology and Embryology of Colonic Stasis."
Dr. George Armstrong, Professor of Surgery, Faculty, McGill University, Montreal, Quebec.
11. "The Thoracoscopy and Its Practical Use."
Professor H. C. Jacobaeus, Serafiner Hospital, Stockholm, Sweden.

BANQUET.

THURSDAY, NOVEMBER 17TH, 1921.

7 P. M.

Addresses.

Eminent members of the profession who are guests of the Society.
Distinguished citizens of the United States.
Presidents of the State Societies.

CORRESPONDENCE

TO PHYSICIANS AND SURGEONS OF WISCONSIN:

Many times in your practice you come in contact with cripples—men, women, and children who, because of their handicap, are denied even a "fighting chance" in the struggle for a livelihood in competition with their more fortunate fellowmen. Sympathy won't help them; neither will charity, to any marked degree. What they need and deserve is just that *fighting chance* and, in most cases, this opportunity is spelled *rehabilitation* —which means a new leg, a new arm—and *re-education*—knowledge and proficiency in a new job.

During the last legislative session, Wisconsin lawmakers passed the Industrial Rehabilitation Law which aims to take care of just such cases as cited above regardless of whether they occur in industry, in civil accidents, or at birth. Through its provisions, the state, with financial assistance from the Federal Government and the local community plans to *rehabilitate* and *reeducate* handicaps, place them in new jobs, advise them in their effort to advance, make them independent, self-supporting citizens—a credit to themselves, their families, the community.

We need the assistance which men and women in your calling only can give. You, who follow most closely in the steps of the Great Healer, realize and appreciate the discouragement that comes to these unfortunates, and likewise, *you*, more than any others, want to see them started on the road to economic independence and happiness.

Give them this chance by reporting to us all dismemberment cases that come to your attention—all cases which you think we might be able to help. The enclosed blank, filled out and mail to Mr. W. F. Faulkes, State Supervisor of Industrial Rehabilitation, Madison, Wisconsin, will quickly bring our representative to your patient. These people need help. We want to assist them. But in this, as in all social work, *co-operation*,

and co-operation from all possible sources, looms out as the true key to *success*.

Very truly yours,
GEO. P. HAMBRECHT,
State Director Vocational Education.

NEWS ITEMS AND PERSONALS

The following officers of the Wisconsin Association of Industrial Physicians and Surgeons were elected at the annual meeting held in Milwaukee in September: President, Dr. C. F. Schram, Beloit; Vice-president, Dr. R. A. Waite, Milwaukee; and Dr. R. E. Fitzgerald, Milwaukee, Secretary-Treasurer.

The new $150,000 Lakeside Hospital, Eau Claire, is nearing completion. It is expected that it will take about three months to complete the inside finishing.

Dr. G. C. Nedry, who has had charge of the surgical work at the Medford Clinic Hospital, Medford, for the past two years, has left for Philadelphia where he intends taking a year's course in advanced surgery at the University of Pennsylvania. Dr. C. E. Nedry, also a member of the clinic, has gone to New York where he will take up a postgraduate course in diseases of the eye, ear, nose and throat. Dr. H. S. McGuinness of Athens is now associated with the clinic.

Dr. L. F. Jermain, Milwaukee, has been elected as director of the department of internal medicine of Marquette University, Dr. E. V. Brumbaugh, director of the department on public health and hygiene, Dr. W. C. F. Witte, surgery, and Dr. M. L. Henderson, gynecology and obstetrics. Dr. George Ernst was elected as chairman of the medical faculty and Dr. Benjamin Schlomovitz as secretary.

Construction on the Wisconsin State General Hospital, to be built at Madison in connection with the Medical School of the University, may be started this fall, according to the state architect. The foundations are already in but the entire structure will not be completed for two years.

Dr. A. J. Pullen has returned to his home in North Fond du Lac after a three month's tour of Italy, Switzerland, France, England, Belgium and Germany.

Dr. F. J. Gosin has recently resigned as city health commissioner of Green Bay and entered private practice. Dr. G. F. Goggins who recently came to Green Bay from Wrightstown where he had practiced for a number of years, has been appointed health commissioner to succeed Dr. Gosin.

The required amount of $50,000 for a new hospital for Beaver Dam has been pledged and the Lamoreaux property purchased to be remodeled and equipped for a thirty bed hospital, to be conducted by the Deaconess association of Fort Wayne, Indiana.

Surgeon General W. S. Cummings of the U. S. Public Health Service and Past Assistant Surgeon S. G. Christian recently visited the Resthaven Hospital at Waukesha.

A movement has been started at Manitowoc to make the Maple Crest Sanatorium a tri-county institution, joining Calumet and Sheboygan Counties with Manitowoc County in the project. The hospital would be enlarged to meet the increased demand for accommodations and a full time physician employed.

Marquette school of medicine graduates whose licenses were held up after they had passed the state board examination because they had not received their school diplomas, will be given the licenses, according to Dr. J. M. Dodd, secretary of the state board. Attorney General Morgan has ruled that the men are entitled to them.

The Federspiel Dental Polyclinic has announced the removal of their offices from the Wells Building, Milwaukee, to their clinic building, corner Astor St. and Ogden Ave., Milwaukee.

The medical and surgical clinics for physicians will be held at St. Joseph's Hospital, Milwaukee, on the second Thursday of each month as heretofore. For the convenience of physicians living outside the city, the hour for beginning the clinics has been changed from eight to nine o'clock and they will continue until twelve or one o'clock.

The twelfth annual convention of the Wisconsin Association of Graduate Nurses, together with the seventh semi-annual meeting of the Wisconsin League of Nursing Education, opened in Milwaukee, October 5th. The following officers were elected for the latter organization: Mrs. A. Northan, Milwaukee, president; Miss Shirley Titus, Milwaukee, vice-president; Miss Regina White, Milwaukee, secretary; and Miss Jane Mutchman, La Crosse, treasurer.

Dr. C. J. Skwor, who has practiced medicine at Neosho for many years, has recently located in Manitowoc.

The firm of Drs. Hitz, Seaman and Gordon, Milwaukee, has been dissolved. Drs. Hitz and Gordon will continue on at 309 Goldsmith Building, and Dr. Seaman has associated with him Dr. Chas. Folan and will continue practice at 312 Goldsmith Building.

Osteopaths in Wisconsin who have satisfactorily passed the authorized state examination in surgery, are entitled to practice without restriction, Attorney General Morgan tells Dr. J. M. Dodd, secretary of the state board of medical examiners in an opinion. Question had been raised as to the kind of license to be granted osteopaths who had successfully passed the examination. The attorney general says it is not necessary that the applicant go through the regular internship provided he has presented a diploma from a reputable college of osteopathy and surgery, and has passed the prescribed

examination. No member of the board or the board in general can arbitrarily withhold from any applicant a license when the conditions prescribed by statute have been complied with, the ruling says.

Dr. G. I. Hogue, Milwaukee, has been appointed President of the recently created State Bureau for the care of the blind.

DEATHS

Dr. A. J. Dake died at his home in Viola, September 16, after a long illness. Dr. Dake was born in 1869 and graduated from the Hahnemann Medical College, Chicago, in 1894. He was a member of the Vernon County, Wisconsin State and American Medical Associations.

Dr. Oscar A. King died at his home in Lake Geneva, September 11th. Dr. King was born in Peru, Indiana, in 1851. He began his study of medicine under Prof. Henry Palmer, Janesville, a prominent military surgeon of the Civil War, and matriculated at Bellevue Hospital Medical College, New York, in 1878. After his graduation, he practiced for a time at Janesville, was then appointed as a physician at the Wisconsin State Hospital for the Insane, Mendota, and went abroad in 1880 to continue his studies. On his return, he was appointed to a chair on the faculty of the College of Physicians and Surgeons, Chicago. He founded the Oakwood Spring Sanitarium at Lake Geneva in 1883 and also the Lakeside Sanitarium which were later consolidated as the Lake Geneva Sanitarium. Dr. King was a member of the Chicago Medical Society, the Chicago Neurological Society, the Illinois State Society and the American Medical Association.

Dr. E. C. Helm of Beloit died at the Beloit Hospital October 6, after a long illness. Dr. Helm was born in Beloit in 1855 and graduated from the Northwestern University Medical School in 1879. He practiced medicine at Byron, Ill., for a year and then for several years in Chicago. He moved to Beloit in 1888 where he practiced until a year ago. He was a member of the Rock County, Wisconsin State and American Medical Associations.

MARRIAGES

Dr. A. J. Randall, Kenosha, to Mrs. Lillian Galvin, Kenosha, September 30.

Dr. W. E. Donohue, Manitowoc, to Miss Kathryn Carey, Berlin, September 14.

Dr. W. S. Middleton, Madison, to Miss Maude H. Webster, Madison, September 30.

Dr. J. R. Minahan, Green Bay, to Miss Hattie Johnson, Green Bay, September 27.

Results of the Wassermann Test on 1518 Men at San Quentin Prison. By G. W. Nagel. California State Journal of Medicine, Vol. XIX., No. 5, May, 1921.

The Wassermann test was performed on 1518 men of which 166 or 10.93 per cent showed some luetric involvement. The following are some data obtained:

Married	39.75 per cent.
Single	60.25 per cent.
Admitted a venereal disease	66.27 per cent.
Denied a venereal disease	33.73 per cent.
Gonorrhea only	32.53 per cent.
Syphilis only	5.42 per cent.
Both gonorrhea and syphilis	27.71 per cent
Never received anti-syphilitic treatment	96.99 per cent.

Of the 166 cases, 139 men received treatment at San Quentin. The course of treatment consisted of an injection of arsenobenzol every four to eight weeks. In the interim the patient receives mercury rubs nightly for six days followed by a week of rest. This procedure is continued as long as signs of lues are present or until symptoms of mercurialism appear.

Up to date 77.53 per cent have shown marked signs of improvement. A few cases remain "Wassermann fast" in spite of prolonged treatment. There is no adequate explanation for such occurrences. In this connection it may be noted that the reliability of the Wassermann test as an indication of the patient's condition has been seriously questioned by some, it being claimed that certain cases though actually cured, still give positive reactions. Another point of interest is that 22.3 per cent of those who showed improvement first gave a negative reaction followed by a positive one again, before the final negative or at least a reduced Wassermann resulted.

CONCLUSIONS.

1. Wassermann test should be made a routine procedure in all complete medical examinations.

2. A negative history and physical examination does not preclude the possibility of lues being present.

3. The treatment as outlined above is an effective and practically safe method of bringing about a negative Wassermann reaction.

4. Five or six injections, accompanied by mercury rubs extending over a period of from one to two years are usually sufficient to bring about the desired result.

5. A small percentage of cases show no improvement in spite of prolonged treatment.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

Essays on Surgical Subjects. By Sir Berkeley Moynihan, K. C. M. B., C. B., Leeds, England. Octavo of 253 pages, illustrated. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $5.00 net.

Taboo and Genetics. A Study of the Biological, Sociological and Psychological Foundation of the Family. By M. M. Knight, Ph. D., I. L. Peter, Ph. D., and Phyllis Blanchard, Ph. D. Moffat, Yard & Co., New York. 1920.

A Laboratory Handbook for Dietetics. By Mary Swartz Rose, Ph. D., Columbia University. New York: The MacMillan Co. 1921.

Studies in Dreams. By Mary Arnold-Forster. With a foreword by Morton Prince, M. D. New York: The MacMillan Co. 1921.

Religion and the New Psychology. A Psycho-analytic Study of Religion. By Walter Samuel Swisher, B. D. Boston: Marshall Jones Co. 1921.

The Elements of Practical Psychoanalysis. By Paul Bousfield, M. R. C. S. New York: E. P. Dutton Co. 1920. Price, $5.00.

Nerves and the Man. A Popular Psychological and Constructive Study of Nervous Breakdown. By W. Charles Loosmore, M. A. New York: Geo. H. Doran Co. 1921. Price, $2.50.

A Study of Women Delinquents in New York State. By Mable Ruth Fernald, Mary Holmes Hayes and Almena Dawley. The Century Co., New York. 1920.

Mind and Its Disorders. A Textbook for Students and Practitioners of Medicine. By W. H. D. Stoddard, M. D., F. R. C. P. Third Edition, illustrated. P. Blakiston's Son & Co., Philadelphia. 1921. Price, $7.50.

Die Geschlechtskalte Der Frau. Ein Psychopathologie des Weiblichen Liebeslebens. Von Dr. Wilhelm Stekel, Nurenwartz in Wien. Urban and Schwarzenberg, Berlin. 490 pp. 1921.

Landmarks and Surface Markings of the Human Body. 5th edition. By L. Bathe Rawling, F. R. C. S. 100 pp. 31 illustrations. New York: Paul B. Hoeber. Price, $2.50.

Human Behaviour in Relation to the Study of Educational, Social and Ethical Problems. By Stuart Paton, M. D. New York: Charles Scribner's Sons. 1921. Price, $6.00.

Squint—Its Canses, Pathology and Treatment. By Claud Worth, London. 5th edition. 242 pp. Philadelphia: P. Blakiston's Son & Co. 1921. Price, $3.50.

The Starvation (Allen) Treatment of Diabetes. By Hill and Eckman. 4th edition. Boston: W. M. Leonard & Co.

Physical Diagnosis. By W. D. Rose, M. D., Associate Professor of Medicine, Univ. of Ark. 2nd edition. 309 illustrations. St. Louis: C. V. Mosby Co. 1921.

General Pathology—An Introduction to the Study of Medicine. By Horst Oertel, M. D., Professor of Pathology, McGill Univ. 357 pages, illustrated. New York: Paul B. Hoeber. Price, $5.00.

Operative Surgery. By J. Shelton Horsley, M. D., Attending Surgeon, St. Elizabeth's Hospital, Richmond, Va. 613 ilustrations. St. Louis: C. V. Mosby Co. 1921.

The Practice of Medicine. By Hughes Dayton, M. D., New York. 4th edition, revised. 328 pp. Philadelphia & New York: Lea & Febiger. 1921. Price, $2.25.

The Manner of Man That Kills. By L. Vernon Briggs, M. D., Director of the Massachusetts Society for Mental Hygiene. Boston: Richard G. Badger. 1921.

Functional Diagnosis. By Max Kahn, M. D., in collaboration with Horris H. Kahn, M. D., Jacob Rosenbloom, M. D., and Wm. J. Gies, Ph. D. 400 pp. New York: W. F. Prior, Inc. 1920.

Roentgen Interpretation. By George W. Holmes, M. D., and Howard E. Ruggles, M. D. 2nd edition. 400 pp. 184 illustrations. New York. Lea & Febiger. 1921. Price, $3.25.

Nutrition and Clinical Dietetics. By Herbert S. Carter, M. D., Paul E. Howe, Ph. D., and Howard H. Mason, M. D. 2nd edition. Philadelphia & New York: Lea & Febiger. 1921. Price, $7.50.

Infections of the Hand. By Allen B. Kanavel, M. D. 4th Edition, thoroughly revised. Illustrated. Philadelphia & New York: Lea & Febiger. 1921. Price, $5.50.

Diseases of the Skin. By Oliver S. Ormsby, M. D., Professor of Skin and Venereal Diseases, Rush Medical College. 2nd edition, thoroughly revised. Illustrated. 1166 pp. Philadelphia & New York: Lea & Febiger. 1921. Price, $10.00.

BOOK REVIEWS

Taboo and Genetics. A Study of the Biological, Sociological and Psychological Foundation of the Family. By. M. M. Knight, Ph. D., I. L. Peter, Ph. D., and Phyllis Blanchard, Ph. D. Moffat, Yard & Co., New York. 1920.

This work of some 300 pages is a study of sex relations and the family from the sociological point of view. It is written in simple language especially for the lay reader in an effort to produce a handbook with a sane, unprejudiced point of view.

It is divided into three parts, namely, the new biology and the sex problem in society, the institutionalized sex taboo, and the sex problems in the light of modern psychology. It is an interesting work worth the reading.

A Laboratory Handbook for Dietetics. By Mary Swartz Rose, Ph. D., Columbia University. The MacMillan Co., New York. 1921.

It is the purpose of this little book to explain the problems involved in the calculation of food values and food requirements and the construction of dietaries, and to furnish reference tables which will minimize the labor involved in such study without limiting dietary study to a few food materials.

It is not by any means a textbook on dietetics and only brief statements of the conditions affecting food requirement have been made. It is divided into three general parts—food values and food requirement, problems in dietary calculation, and various reference tables with an appendix on the equipment of a dietetic's laboratory. It is an excellent little work and should be within the reach of every dietitian.

Studies in Dreams. By Mary Arnold-Forster. With a foreword by Morton Prince, M. D. The MacMillan Company, New York. 1921.

This interesting little volume of 180 pages is the result of a series of notes in which dreams and certain experiments in dreaming have been by the author more or less regularly recorded during a long period of years. The author of the work modestly makes no claim to be a scientific recorder but only to be a recorder of her own dream experiences, who has been impelled "to stray a little beyond the province" assigned and to "attempt some partial explanation of the riddles that are met with."

Her work is more truly scientific than she claims, however, for careful records are usually of more scientific value than unsupported theories. Her entire work shows a well-founded familiarity with the literature on the subject and that she has tested these theories in the light of her own observations. The work is most interesting and is well worth the time of anyone interested in the subject.

Religion and the New Psychology. A Psycho-analytic Study of Religion. By Walter Samuel Swisher, B. D. Marshall Jones Co., Boston. 1921.

There has been much written the last few years on the subject of psycho-analysis. This work is unique and distinctive in that it applies psychoanalytic or Freudian psychology to the problem of religion and the conduct of human life. Different chapters deal with such subjects as the psychic phenomena of spiritism, the mechanism of dreams, methods of mental healing, ouija, automatic writing, etc. It explains the myths of primitive religion and discusses the adjustments of religion in our modern post-war life.

It aims to help the reader to a better understanding of his inner life, personal problems and conflicts. It applies Freudian psychology in a new and novel way which will at once hold the reader's interest and continue to hold it throughout the book.

The Elements of Practical Psychoanalysis. By Paul Bousfield, M. R. C. S., E. P. Dutton Co., New York. 1920. Price, $5.00.

The author states at the beginning, "The object of this work is to give an account of the theory, technique and scope of psychoanalysis in such a form that its essentials may readily be understood by the student or practitioner without previous systematic reading in psychology or psychotherapy."

It is a most valuable work for the student or practitioner in that it does not presuppose previous reading on the subject and does not require a dictionary at hand to battle with a terminology most disconcerting to those unfamiliar with the subject. A careful reading of the book fails to show the omission of any essentials, while excluding unnecessary details. A glossary of technical terms in common use is included.

Among the chapter headings are: The unconscious mind, desires and psychic energy, parental complexes, dreams, technique of psychoanalysis, compulsion neuroses, etc.

So much is written on Freudianism these days that some knowledge of its principles is becoming necessary to the general practitioner and no better work has come to the attention of the reviewer for a beginning of the study.

Nerves and the Man. A Popular Psychological and Constructive Study of Nervous Breakdown. By W. Charles Loosmore, M. A. George H. Doran Co., New York. 1921. Price, $2.50.

The term "nervous breakdown" is one the physician hears daily and scarcely a history is taken without its entering into it. Mr. Loosmore writes on the subject, not as a medical expert, but as a practical psychologist of wide experience. In this work, he considers the nature of nervous breakdown, the causes, fatigue, heredity and nerve strain. Under the remedies—the call of nature, rest and relaxation, sleep, health habits, mental control, poise and serenity, cheerfulness, self suggestion, work, interest, hobbies, self education, etc. It will be profitable reading for the physician and will be a valuable book to recommend or loan to many a patient.

A Study of Women Delinquents in New York State. By Mabel Ruth Fernald, Mary Holmes Hayes, and Almena Dawley. The Century Co., New York. 1920.

The investigation of which this book is a report was a composite piece of work shared by the authors. The statistical treatment was mapped out by Beardsley Ruml and the detail work by Mary A. Clark. Various chapter headings are: Problems and methods of treatment, general account of delinquent groups studied, statistical methods, methods of psychological examination, methods of social investigation, nature and extent of delinquency, significant factors and early home conditions and family status, emotional background, economic efficiency, sex irregularities, mental capacity, etc.

It is high time more study and efforts along this line were made. Nothing could be more medieval or irrational than the prescribing of punishment for delinquents, the punishment which should be the treatment based on the anti-social act committed rather than on a study of the human being the courts are attempting

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to treat. This work will prove of inestimable value. It is not theory, it is science itself based on facts, and society is indebted indeed to the courageous group of workers who are today attempting to lay a scientific foundation for the care and treatment of our delinquent classes.

Mind and Its Disorders. A Textbook for Students and Practitioners of medicine by W. H. D. Stoddard, M. D., F. R. C. P. Third edition, illustrated. P. Blakiston's Son & Co., Philadelphia. 1921. Price, $7.50.

In the author's first edition, he states, "My endeavor has been to induce the reader to think neurologically of mental processes, normal and morbid, my own work for the past twelve years having consisted of clinical research into the nature of nervous phenomena associated with mental disorders," thus approaching the subject in a rather different manner.

The book is divided into the following sections: Normal psychology, the psychology of the insane, mental diseases, the neuroses, the psychoneuroses, the psychoses, toxic insanities, organic insanities and idiocy and imbecility. In his third edition, Dr. Stoddart acknowledges a changed attitude toward mental disease, having become a convert to the Freudian doctrines and teachings that physical manifestations of a functional nervous disorder must be regarded as secondary, not primary, as taught in the first edition.

In his new edition, he has altered but little the descriptions of the various maladies but has indicated the psychical manifestations underlying them so far as possible. New chapters on "anxiety neurosis" and "paraphrenia" have been added. The new edition is an improvement in many respects over the first and second and we are indebted to Dr. Stoddart for a most valuable text on mental diseases. In closing the review, one can not help but comment on his interesting and readable presentation of what some authors make most tedious reading.

Essays on Surgical Subjects. By Sir Berkeley Moynihan, K. C. M. G., C. B., Leeds, England. Octavo of 253 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $5.00, net.

The reviewer acknowledges with great pleasure the receipt of a copy of "Essays on Surgical Subjects," by Sir Berkeley Moynihan. The reviewer is especially pleased for the reason that he has heard this eminent surgeon speak on several occasions. It was his pleasure to have heard "The Murphy Memorial Oration" at Montreal last October and one could not help but be enchanted by his address and by his wonderful delineation of and tributes to one of our master surgeons, John B. Murphy. The reviewer also heard him at London, England, in 1914 when he presented the subject of "Intestinal Stasis" before the Clinical Congress of Surgeons of North America. This subject was presented in wonderful diction, delightful conciseness and with remarkable clearness. The occasional, as well as the general surgeon, can read the essay on "The Ritual of a Surgical Operation" with great profit. The various essays upon "Gastric Ulcer," "Gastro-Enterostomy" and "Emergencies of Abdominal Disease" are of particular interest to both the general practitioner and the specialist in surgery.

To my mind there is no other member of our profession who possesses to a higher degree the faculty and power to express and depict in proper phraseology the various conditions evidenced through abdominal disease and the treatment incidental thereto.

There is much of interest and profit in his essay on "The Surgery of the Chest." The medical man, irrespective of specialty should read this admirable compilation of "Essays on Surgical Subjects."

V. F. M.

Viability of Spirochete Pallida in Excise Tissue and Autopsy Material. By George R. Lacy, M. D., and Samuel R. Haythorn, M. D., *American Journal of Syphilis*, Vol. V., No. 3, July, 1921.

The authors became interested in the question of the occurrence of spirocheta pallida in dead tissue, when actively motile spirocheta were found in the blebs and organs of a stillborn congenitally syphilitic infant which had been kept in a refrigerator twenty-six hours prior to the autopsy. They conducted experiments in order to determine the time during which the spirocheta pallida remain alive in dead tissue, the criteria being the motility of the organism and its ability to transmit the disease to a new host.

Their results are summarized below:

Spirocheta kept in serum or moist tissue, either human or animal, may retain slight motility as long as three months or more. Reliable dark-field examinations can be made on tissues or fluids collected several hours previously, provided they are kept moist and cool. Complete drying is probably fatal to the spirocheta pallida, since each of the rabbits used by the experimenters failed to develop syphilitic lesions when inoculated with dried spirocheta. This is in accord with the work of Neisser. Spirocheta pallida may, and in the case of the authors did, remain virulent in autopsy material for twenty-six hours or longer.

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ORIGINAL ARTICLES

THE SEQUELAE OF EPIDEMIC ENCEPHALITIS.*

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When epidemic encephalitis first appeared among us we were impressed by its treacherous course and the tendency to fatal bulbar involvement even in cases which at first were mild. We were also impressed by the fact that people might be severely ill and in a stuporous state for weeks, yet recover completely. Compared with poliomyelitis, this new disease was considered one with greater immediate danger, but if death was escaped, we had little dread of permanent crippling as is so common in the case of poliomyelitis. However, three years' experience has modified our views. The mortality is lower, thanks to the recognition of the milder forms and probably to some extent to a change in the type of the disease. On the other hand, we have learned that prompt and complete recovery is not the rule, that convalescence at best is slow and tedious, that troublesome physical and mental symptoms may remain and that even a sort of progressive chronic disease of the brain may supervene.

Morris Grossman[1] who reexamined 89 cases several months after discharge from the hospital thus sums up the prognosis: "Probably less than twenty per cent of the patients who become ill with epidemic encephalitis die during the acute stage of the illness. Of those who survive the acute stage, about ten per cent may develop a progressive disease of the central nervous system. The remainder will make a good functional recovery in from six to twenty-four months, with the probability of progressive approach to the normal after that period." Grossman found some form of psychic disorder in 55 per cent of the cases, insomnia in 55 per cent, tremor and irregular voluntary movements in 58 per cent, pupillary disturbances in 30 per cent. (Argyll-Robertson pupils in 5 cases) etc.

Among the sequelae observed by me the following are the more striking and frequent types:

1. *The paralysis agitans syndrome, unilateral or bilateral, stationary, regressive or slowly progressive, sometimes combined with neurasthenic or psychotic symptoms.* This type is described by a great many authors.

Case 1. *Severe, unilateral Parkinsonian syndrome, pupillary inequality and rigidity as persistent sequelae.*

A girl 13 years old referred by Dr. N. C. Phillips of Freeport, seen by me on August 3, 1921, had been taken ill in January, 1920, with fever, diplopia, somnolence and mask-like facies. She was in bed for twelve weeks, had urinary incontinence for a month and fecal incontinence for a brief period. The hands and feet were blue during the acute stage and have remained so. During the acute stage the pupils became unequal and did not react to light or accommodation. The patient could not read for a long time after the acute stage. The right arm has remained almost useless, being very rigid, weak and extremely clumsy. She has learned to write with the left hand. The right leg is also weak and she walks very slowly with the body curved to the left. The pupils are unequal, the left being larger and immobile while the right one reacts slightly to light. There is still slight diplopia on looking to the left. The left knee and ankle reflexes are relatively increased but the plantar reflexes are normal. The muscular rigidity and motor difficulty impress one as being less due to affection of the pyramidal motor system than of the extrapyramidal or striatal system, affected in paralysis agitans.

Case 2. This patient, a girl now 16 years old, was described as Case 3 in my first paper on encephalitis (Jour. of the A. M. A., April 5, 1919). She went through a very severe illness with marked

*Read before the Ninth Councilor District Medical Society at Wausau, Wis., on Sept. 30, 1921.

[1]Archives of Neurology & Psychiatry, 1921, V, 580-588.

rigidity and attacks of jerkings and had to be fed by nasal tube for over a month. For many weeks she appeared to be unconscious yet later she could relate what nurses and doctors had said about her, particularly that they had spoken of her expected death at any moment. Her illness began in February, 1919. By June she was able to walk, but for a long time only on her toes because of extreme flexor contracture. While she was ill in bed the contractures in both the arms and feet were so firm that it was remarkable that they practically disappeared. However, she has gradually acquired the appearance of a patient with paralysis agitans. The rigidity of the neck and limbs, the masked expression and the nearly constant tremor of the hands and feet are very typical. The reflexes are now normal, while she had a left Babinski sign during the acute stage. Nystagmus which then was a marked feature also disappeared. Lately she has improved somewhat upon the use of hyoscine and exercises.

Case 3. An automobile mechanic, 38 years old, referred by Dr. Verity, had been previously well except for a mild influenza in 1919. He was admitted to my service in the Presbyterian hospital on April 5th, 1920. The acute illness had set in on December 20th, 1919, with chilliness, malaise, nausea, vomiting and diarrhoea. On the 27th he developed severe pain in the right shoulder and later in the chest and left arm. This disappeared in a week. During this time diplopia and blurred vision set in and were followed by a state of alternating stupor and delirium for two weeks. At this time muscular tremors set in and gradually the characteristic masked facial expression and muscular rigidity seen in Parkinson's disease developed. One of the chief complaints was "smothering spells' which began early in March. He felt as if he were choking and unable to inhale air. On his admittance to the hospital his chief complaints were those of "smothering spells", general weakness and stiffness and the tendency to tremor.

His appearance strongly resembles that of a case of paralysis agitans but the tremor varied a great deal from time to time. The tendon reflexes were increased. The pupils were slightly unequal at times and reacted sluggishly to light. Spinal fluid obtained April 7th was clear, gave a negative Wassermann test, a cell count of 14 and a weakly positive Ross Jones globulin test. The Lange gold test was also weakly positive (0122111000). He remained at the hospital until July 17th and constantly complained of feeling weak and uncomfortable. His sleep at first was poor but later improved and in general he was somewhat better at the time of discharge than on admittance.

Case 4. A married woman, 53 years old, was first seen with Dr. J. C. Gill at the Presbyterian hospital on April 24, 1919, and repeatedly during the five weeks of her stay at the hospital. She had an attack of influenza in 1890 and a mild one in October, 1918. She went to California in January, 1919, as she had felt tired and suffered from indigestion during the previous month. The feeling of exhaustion increased and on February 2nd she was admitted to a hospital in Los Angeles, under the care of Dr. F. A. Speik, who kindly informed us that the spinal fluid at that time gave a negative Wassermann reaction, a strongly positive globulin test and a cell count of 14. While in the hospital in Los Angeles she gradually became stiff and acquired an immobile expression. I made the following note on April 24th: Typical Parkinsonian facies and speech. The mouth can be only partly opened and she can not show the teeth well. The ocular movements are slow and limited in all directions, probably on account of rigidity rather than any actual palsy. Shutting of the eyes is very slow and produces a coarse tremor in the upper lids. The arms are stiff and habitually flexed at the elbow, wrist and metacarpophalangeal joints. There is a slow tremor in the arms, both at rest and on intended movements. She cannot extend the elbows. The movements of the left fingers are weaker than those of the right. Attempts to extend the wrists cause pain. When she raises the arms a very coarse tremor is produced. The legs when at rest show no tremor but there is some rigidity and all movements are slow.

All tendon reflexes are normal; plantar and abdominal reflexes normal. Optic discs normal. The leukocyte count on April 22nd was 14,400; hemoglobin 68 per cent; blood pressure 158-96. Spinal fluid obtained on May 16th was normal and the leukocyte count on May 25th was 9,800. She was drowsy and listless but on a few occasions slightly delirious (possibly partly caused by hyoscine).

On August 14th, 1919, the patient's husband wrote that her condition remained practically the same except that occasionally involuntary discharges had occurred. On April 7, 1920, he wrote

that her physical condition was much improved and that she was able to walk about the house and as far as a block away from it. There was still considerable stiffness of the left arm. Her mental condition, however, was abnormal as she frequently talked irrationally, particularly about people having been lost or done away with. "But most of the time her brain seems to work well and in many ways she is very bright; her memory as to the past is fine."

Early in 1921 she was admitted to a State hospital for the insane as a voluntary patient. She had showed continued fear at home so her husband could hardly leave the house without her being afraid he would never come back. She imagined that two or three men had been killed in her immediate neighborhood. The physician in charge wrote me that he considered her mental condition an exaggeration of a tendency to apprehensiveness which had been present all her life. The left arm, he wrote, showed a spastic condition with tendency to contracture.

II. *Cases with Prolonged Psychoneurotic Condition of Marked Hypochondriacal Character.*

Case 5. A high school boy, 18 years old, referred by Dr. Folk of Chicago Heights was first seen on February 2, 1920. There were no cases of definite nervous disease in the family but several relatives were of a worrying and fussy type. The patient had been well until January 18, 1920, when he complained of weakness in the knees. He was somewhat exhilarated and slept very poorly for several nights. He had diplopia from January 21st to the 24th. When examined on February 2nd, there was no diplopia and the general neurological examination was negative. He returned to his home but remained sleepless and restless. In a letter of February 24th, Dr. Folk stated that he had made a lumbar puncture and that the fluid gave a weakly positive globulin test and a cell count of 50. There was no improvement after the puncture. I saw the patient again on June 29th. He had been in bed most of the time for two months after my first examination and remained restless. He slept very little. There was a marked tendency to grimaces and general jerky movements, almost choreiform in character. He then was under observation at the Presbyterian hospital for two weeks during which time he improved a little in regard to jerkiness and insomnia but he was extremely morbid and feared heart disease. Later he spent some weeks at various sanitariums.

He is now at home in a most pitiful, morbid condition. I have received several long letters from him in which he dwells at length on his palpitation and other sensations. Thus, on August 17th, 1920, after describing his palpitation he writes: "Furthermore I am in a constant shiver or quiver, like a tuning fork. I don't mind it so much in my body but it is in my head also so that when I lay my head down it makes the pillow tremble and my head is full of a low rumble which almost drives me crazy. Then, besides this, every once in a while the bed moves or seems to give way in a certain direction and I think I am falling. The pulse in my head causes me to have a rocking sensation especially when I close my eyes. Everything quivers before my eyes. I can't see a thing steadily. Sometimes I don't feel the pulse in my head but I hear a rocking noise that seems outside of my head but which I know is not. All this does not let me have a moment's rest day and night." * * * "It is, however, my mental condition that worries me. I worry because I worry and I can't help myself. I feel as if I were in a rut and the whole world was above me. Such a helpless, hopeless feeling. I seem to be losing control of my senses or reason. It is difficult for me to concentrate or even think. I have no hope; if I do have something to hope for the next day it does not better me because I have been disappointed so many times. If I say 'I'll do something tomorrow,' I know right well I won't do it when tomorrow comes. It is a peculiar feeling: I have such a longing to be well that when I think of it my heart gets such a peculiar aching, sort of tickling feeling, that does not let me sleep." Several letters in the same vein have been received. In the last one, dated February 21st, 1921, he says: "I am no better now than I was when I last wrote you. In fact I think I am worse in that I have lost all hope and ambition to get well. My heart still thumps as badly as ever and I lie in bed practically all of the time, taking a short walk occasionally. I can't sit or stand still. I still have that depressed void feeling in my chest, that 'pulling feeling'. My back has become weak and aches from lying in bed so long. I do not sleep nights, getting only a few hours, two or three, during the day. The humming, vibrating, buzzing noise in

my head still continues. As I stated before, my heart still palpitates rapidly and strongly. Worst of all, I am getting so used to the idea of being sick, of lying in bed, that I am beginning to not care what happens to me. * * * Not the least of my troubles is *fear*. If I could master that I would be all right. I am afraid to go far away from home in case something will happen to me to detain me from coming back to lie down. I am afraid to go to a store because I might have to wait a long time to be waited on. The worst of it is I know I am a fool for being afraid but I can't help myself. I would fall down if I had to stand upright and still for a time. About three months ago, before Christmas, I went to work in a clothing store as clerk. I wiped boxes and kept myself busy. The first day I worked four hours at one stretch, worked hard, without lying down. The next day I worked three and one-half hours at one stretch. And so every day I worked less and less at a stretch without lying down instead of more and more as it should have been. I didn't overdo it because I didn't feel tired at all. Just that pulling, depressed feeling in my chest and an ache in the back and around the neck and the steady thumping of my heart,—all this made me lie down. Whenever I waited on a cranky customer that looked at a piece of goods for an hour and at every angle,—I thought I'd die. I could hardly stand still. Believe me, I had a time of it. After Christmas I quit—Couldn't stand it longer. Now I remain home in bed most of the time.

* * * Understand I am not fidgety and nervous as I was. I lie perfectly quiet and do not have any nervous spells or show that I am nervous in any way. I have control over myself no matter how my heart begins to beat. The only time I do fidget a little is when I can't find a place to lie where I won't feel so conscious of my heart. I turn on my back but my whole spine jerks up and down; I turn on my side and it does the same. But usually I lie quietly. When I am in an upright position my heart beats faster. The slightest exertion causes it to "go". Also my breath comes hard when I exert myself slightly. That is, I suppose from lying inactive so long. When I take a walk I fairly gasp for breath. I know my heart isn't affected, that there is no organic trouble and that there are people with hearts far worse than mine who go around and do business. Then why in the name of common sense can't I do it? I am so painfully conscious of it, you might say, but why am I so conscious of it? When I walk I don't feel my heart beating but I know it is beating fast. It is the depressed feeling in my chest that keeps me from walking and I suppose indirectly the heart does too. As soon as I get a few blocks from home, I want to turn back, I feel so lost and tired and weak."

A long letter of September 21, 1921, is along the same lines.

Case 6. A dentist 27 years old, with a rather worrying disposition, passed through a typical attack of encephalitis with restlessness, insomnia and diplopia in April, 1920. After the acute stage he complained of poor sleep, parasthesias in the head, backache and a feeling of great exhaustion. He became extremely morbid and hypochondriacal and a victim of quacks and charlatans. This state still continues and he has not been able to return to his professional work.

Case 7. A carpenter, 49 years old, referred by Dr. L. M. Bergen of Highland Park, while run down after a long period of hard work was taken acutely ill in November, 1919, with fever, general twitchings and extreme somnolence. The latter lasted five weeks. By February, 1920, he was able to walk about outdoors. However, he became extremely morose and brooded constantly about his condition. When examined by me on March 30, 1920, his only objective signs were tremor of the tongue and eyelids and slight lateral nystagmus. His mental depression grew worse for a few months more and he once apparently made preparations for committing suicide by means of gas. In August, 1921, his wife informed me that he was working, but remained melancholy and morose, avoided people and particularly refused to see any physician.

III. *A prolonged simple exhaustive state similar to what is usually called neurasthenia.*

Case 8. A man now 64 years old, described as case 8 in my paper on encephalitis in the Journal of the A. M. A., April 5, 1919, made a recovery as far as active symptoms are concerned but he has remained in a state of nervous exhaustion with marked exhaustibility and a feeling of inward trembling though there is no visible tremor.

IV. *Hemiplegic types. Not common and often mixed with other features.*

Case 9. *Right hemiplegia and aphasia persisting long after the acute attack.* A woman 45 years old seen with Dr. J. H. McClellan after two or three weeks of slight cough and hoarseness was taken ill on January 20, 1920, with muscular pains and fever, the latter lasting five days with a temperature ranging from 101° F. to 103° F. There was some headache at first and she vomited for a few days. A week after the onset she became confused mentally and developed weakness in the right hand and difficulty in speech. When seen on January 31st, she had a distinct weakness in the right hand and the right leg was stiff though it could be raised. Knee and ankle clonus and the Babinski sign were present on the right side. There was a distinct aphasia, the patient being unable to name common objects. Lumbar puncture yielded a clear fluid with negative Wassermann reaction, a cell count of 71 (lymphocytes), a very weak Ross Jones globulin test and positive Lange gold test with the maximum reaction in higher dilutions than seen in syphilitic cases (0012211000). The next day the right hemiplegia and aphasia were complete. After a few weeks she began to improve slowly. When seen on August 6th she walked quite well and was able to raise the right arm which was stiff and the fingers were almost useless and in a flexed position, but thanks to the persistent use of massage they could be extended passively. When heard from in February, 1921, her recovery was almost complete, only a slight weakness of the hand remaining.

Case 10. *Severe mixed type with persistent hemiparesis, general exhaustibility, insomnia and pupillary anomalies.*

A woman, 45 years old, had severe influenza in 1918 and later several attacks of tonsilitis. In November 1919, she was taken with severe occipital headache which lasted for three days, then pain in the arms, slight fever, insomnia, unequal pupils and diplopia, tremor and deviation of the tongue to the right, slight right-sided facial palsy. Delirium was present for several days. After two weeks right hemiplegia set in, incomplete in the leg, nearly complete in the arm, followed by several weeks of renewed fever, profuse perspiration, twitchings of the abdominal muscles. In April, 1920, she began to improve and to walk a little but suffered from insomnia, great fatigue and rapid pulse, and was suspected of hyperthyroidism.

When seen by me in April, 1920, nearly a year and a half after the acute illness she still had a distinct right hemiparesis, ankle clonus, Babinski sign and increased knee reflex on the right side. She dragged the right leg in walking and the tongue deviated to the right. She still complained of poor sleep, great exhaustibility, pain in the arms, a tendency to bite the tongue and lip.

A point of especial interest in this case is the fact that during the acute stage an ophthalmologist noted the presence of choked disc, a very unusual symptom in this disease which has not been present in any other case examined by me.

V. *Persistent Somnolence.*

The following is an instance of lethargy persisting for over a year.

Case 11. The patient, seen with Dr. H. L. Baker on Feb. 11, 1921, is a chemical engineer, 25 years old, who had been engaged in experiments with fire extinguishers prior to the onset of an acute illness in December, 1919. For a week he complained of poor sleep and rapid breathing and then was quite suddenly taken with high fever, delirium and double vision. The latter lasted one day only. He was asleep nearly all of the time for three months but could be aroused sufficiently to eat and to walk to the toilet. The tendency to drowsiness and rapid breathing still persist and he will frequently sleep until long in the afternoon if permitted to do so. Aside from the drowsiness and a certain indifference he is normal mentally. The left pupil has remained wider than the right since the onset. The spinal fluid was not examined during the acute stage but was found normal last January. Early in February he had an attack of tonsilitis during which his drowsiness disappeared entirely but it returned immediately afterward. Aside from the unequal pupils and increased knee jerks neurological examination was negative. The blood pressure was low (96).

At my suggestion the patient was given nucleinic acid, tuberculin and similar substances to produce an artificial fever. All this was attended with some success.

In September, 1921, he was reported as much improved.

VI. *Persistent Disturbance of Innervation of Muscles of the Face and the Jaw.*

Case 12. A switchman, 50 years old, was referred by Dr. A. C. Purcell of Streator on February 25th, 1921. He had been well prior to an undoubted attack of acute encephalitis in February, 1919. He was at the hospital for three weeks with fever, lethargy and blurred vision. A week after the onset the face became drawn to the right and remained so for about six weeks. His jaw seemed to twist and he sometimes bit the cheek on the right side. There was pain in the region of the right temporo-maxillary joint. He returned to work in April, 1919, but he continued to feel rather tired and to have difficulty with his jaw. In September, 1920, he was no longer considered fit to be a switchman and was made a tower man. He keeps his teeth together when talking and frequently grinds them. There is no definite facial paralysis and the electric reactions are normal but in talking he uses the right facial muscles less than the left. The tendon reflexes are increased and the abdominal and cremasteric reflexes weak; otherwise there are no signs of organic nervous lesion.

OCULAR MANIFESTATIONS IN ENCEPHALITIS LETHARGICA*

GUSTAVUS I. HOGUE, M. D., F. A. C. S.

MILWAUKEE.

This most interesting disease has been named Encephalitis Ophthalmoplegia; Encephalitis Lethargica; Epidemic Encephalitis and Sleeping Sickness.

We have positive evidence of an acute encephalitis in these cases, but at the present time we cannot classify this disease as epidemic, as it has not reached this stage numerically.

This disease made its first appearance in Vienna in the Winter of 1916 and was called Encephalitis Lethargica by Von Economo in April, 1917. France and England were invaded in the Spring of 1918 and it has been prevalent throughout the world since that year. There were 136 cases on March 4, 1921, in England, with 22 cases in London.

A record of the deaths in this State during the year 1920, as reported, was 26. This year in January there were 4 deaths, in February, 13, and an incomplete report for March with 14 deaths recorded.

In Milwaukee twenty cases have been reported since January 1, 1921, with eight deaths. In New York City during the first four months of this year two hundred and eighteen cases were reported.

Reports indicate that the disease is wide spread in the United States. The first cases appeared in the Fall of 1918 on the Eastern Coast and in October, 1919, the Western Coast was invaded.

We must not confuse this disease with the Sleeping Sickness of Africa.

Lethargy, Somnolence or even Coma is present to a greater or less extent in all these cases.

The ocular manifestations appear early in nearly all instances and it is frequently the earliest symptom complained of by the patient.

The Ophthalmologist is frequently the first to be consulted and he must not overlook the causal factor when the patient complains of double vision or drooping of the eye lids. I believe there are a large number of these cases with us but the symptoms are so mild and transient that they are not attributed to the Encephalitis. Every case should be reported in order to obtain accurate statistics.

The eye symptoms in order of frequency are as follows:

1. Diplopia,
2. Ptosis,
3. Impaired accommodation,
4. Nystagmus,
5. Sluggish pupils,
6. Optic Neuritis,
7. Pappilloedema.

It is the tendency for the ocular symptoms to result in recovery and therefore the prognosis of eye disturbances is good if the patient survives.

Let us study the eye symptoms more in detail. The Diplopia, due to motor paresis or paralysis, is of central origin and is usually transient. The nerve involvement in order of frequency is the 6th, 3rd and rarely the 4th. The latter is easily overlooked because it is not seen when ptosis appears or when the patient is in a stage of lethargy.

The Diplopia is noted in the distance and in every direction but I have never seen one that complained of this disturbance while reading. The vision is usually normal in the distance as well as

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*Read before the Wisconsin Surgical Association, May 18, 1921.

for the near. The motility is also preserved in most cases. This symptom is usually the first to disappear, but may recur and affect the opposite eye. The pathology is unknown.

The Ptosis is bilateral usually and may be complete but is frequently partial. In the state of lethargy the lids may be closed and opened with great difficulty. A tremor of the lids is frequently observed in this disease. The ptosis is due to weakness of the levators. Ptosis combined with ocular paresis is rarely met with in any other disease and is pathognomonic of Encephalitis Lethargica.

Impaired accommodation is manifested by quick fatigue and the emmetrope cannot read even at arms length. This symptom is the last to leave, persisting sometimes for many months. The pupils are frequently sluggish in action and there may be irregularity and inequality, bilateral usually. The pupils in some cases remain dilated and fail to react to light.

The Nystagmus may be light or pronounced. Sometimes merely nystagmoid twitching is seen. The facial nerve is sometimes involved and this usually unilaterally. There is rarely lagophthalmus.

Optic Neuritis is manifested by a blurring of the Optic disc and is probably due to dilatation of the capillaries with the resultant congestion of the retinal veins.

Pappilloedema is a rare condition. I can find only two cases on record and I wish to add an interesting case with particular symptoms in my report of cases. There is probably a sub-cortical hemorrhage or oedema cerebri, or both, responsible for this symptom. This condition, in every case reported, was unilateral and the same holds good in the case under observation.

The inflammatory changes in the brain are extensive. The macroscopic inspection reveals meningeal congestion and petechial hemorrhages in both the white and grey matter. Oedema is also usually present.

The base of the brain is the seat of predilection. The result is pressure on the nuclei of ocular nerves.

Microscopically we find perivascular cellular infiltration and minute hemorrhagic areas rather discrete in the subthalmic area. Fever was present in only one of the four cases under observation.

The cerebro spinal fluid is usually normal and the pressure normal. The course varies from a few days to years. Mortality is about 25 per cent; death due to involvement of respiratory center.

The organism has been isolated by Drs. Loewe and Strauss of New York and confirmed by Dr. Thalheimer of Milwaukee just recently.

There is no relationship to Influenza or to Botulinus, as was once thought.

The disease is appearetly not contagious as one of my patients insists upon sleeping with her mother and has not transmitted the disease after ten months of this intimate association. Health Commissioner Copeland of New York agrees with me in this statement.

Therapy is symptomatic. In our cases we used Pot. Iodide without any appreciable benefit. The rest cure should be insisted upon in every case. Rest for the eyes as well as for the body. Young adults are the most frequent victims of this disease.

Differential Diagnosis:

1. Brain tumor,
2. Extra Dural abscess,
3. Meningitis, T.B., or Serous,
4. Uremic or diabetic coma,
5. Lues, cerebro-spinal,
6. Hysteria.

Case report No. 1, Referred by Dr. S. Wetzler.

Miss M. W., Age 24, single, stenographer.

Family history negative. Previous history negtive. General condition good, nervous. Glasses worn for myopic astigmatism, which bring her vision up to normal.

Onset July 7, 1920, with left facial palsy, vertigo and double vision. No fever. Headache slight at rare intervals.

Eye symptoms as follows: Ptosis slight, bilateral; Diplopia in the distance or beyond 15 inches from the eyes, and in every direction in the distance; Paresis left 6th nerve marked from July 7, 1920 to December 23, 1920, when, after an interval of two days, there was a noted paresis of the right external rectus. The face on the right was also attacked at the same time; Nystagmus horizontal and bilateral to a marked degree; Pupils sluggish and dilated bilaterally; Accommodation decidedly weak; Papilloedema was noted on February 1, 1921, in the left eye. The patient complained of pain and a decided fog before the eye.

A definite choked disc, amounting to three (3)

dioptres, was observed by the writer and verified by Dr. Koch. This condition gradually declined until on April 12th, when no oedema of papilla existed, and the patient's only complaint today is a blurring of the print in the near.

The neurological examination was negative. Spinal fluid negative and pressure normal.

This patient has been under observation for ten months and during this period she has insisted upon her mother sleeping with her every night. This against the wishes of her medical advisor. The mother has not shown any evidence of the disease to date.

Case Report No. 2, Milwaukee County Hospital.

J. L., Age 16, Occupation not stated.

Three weeks previous to entrance to Hospital (Feb. 1, 1921) patient became dizzy especially on change of position of head. Patient became very restless, garrulous and did not sleep at night. Physicians had to prescribe powder to produce sleep. Following this early period of 2 weeks of excitement patient became depressed and then later lethargic.

On entrance to the hospital paatient showed the "indifferent" attitude answering only at times when spoken to. Two days after entrance to Hospital when patient was asked a question, response was a series of unintelligible sounds. Patient gradually became worse, lethargy deepened. later passing into coma.

Fever was slight on entrance, but gradually increased about 0.3 of a degree each day and suddenly taking a jump frrom 103 to 106 two days before death and reaching 108.4 just before death.

Patient had no headaches, the first symptom being marked dizziness, especially on change of posture. There was some weakness of left side of face.

Eye Symptoms: No Diplopia could be elicited; Bilateral ptosis present; Lack of synergic action of eyeballs but no strabismus present; Slight vacillatory movement of the eyes, especially to right; Right pupil larger than left; Left somewhat irregular but reacted sluggishly to light; Accommodation unobtainable; Both fundi normal.

Spinal fluid: Wassermann negative; Globulin, Plus; Cultures, negative; Cell count 15 on entrance, 180 three days before death; Fluid under great pressure, about 180 drops to a minute; Fluid always crystal clear.

Family history, negative. Past history, had measles at 8, chicken pox last year. Had a discharging ear at 5 years of age, but condition cleared up until present complaint, when with onset of present illness ear again began to discharge. When ten years of age had chills for two days. The chills lasting about 15 to 30 minutes. Patient lived in Missouri at this time and probably had malaria. Otherwise past history is negative.

Differential diagnosis:

Extra dural abscess was the diagnosis by one of the consultants.

Abstract from Post Mortem Record No. 1265, made by Dr. Margot.

No abnormal external appearances of note were found.

The scalp and tissues over the calvarium appear normal. The dura was not adherent and was white and glistening. The superior longitudinal sinus is empty. The pia was quite cloudy and opalescent due to marked edema of the left meninges.

There were no gross hemorrhages, except very fine pin point ventricles.

Microscopic examination:

Perivascular infiltration of the vessels of the white matter, especially of the caudate and lenticular nuclei, optic thalamus, pons and posterior horns of the cord, oedema and miliary hemorrhage of surrounding parts.

Case Report No. 3, Referred by Dr. M. J. Koch.

Mr. C. U. O., aged 24, single. Tool maker. General condition poor. Family, personal as well as previous history, negative. Onset present illness, December 24, 1920, with history of blurring of vision and double vision. No fever or headache at any time.

Lethargy began Jan. 1, 1921, but not marked, and persisted for about two months. The left facial and also the left arm were semi-paresed.

No history of Influenza. The spinal fluid and blood upon examination were found negative.

The eye symptoms were as follows: Ptosis bilateral and partial; the left more marked than the right lid; Diplopia from December 24th, 1920, to January 8. 1921; Paresis of the 3rd, 4th and 6th nerves, left eye; Nystagmus lateral, bilateral and rhythmic; Pupils sluggish to light and accommodation.

Case report No. 4, Referred by Dr. M. J. Koch.

Mr. J. C. N., aged 39, married. Conductor R. R.

General condition good. Family, personal and previous history negative.

Onset present illness December 27, 1920, with nausea and vomiting, at the same time a Parotitis with excessive salivation was present. No fever or headache. Lethargy not present. The man was able to keep up his work.

No history of Influenza. The spinal fluid and blood were negative.

The eye symptoms were as follows: Ptosis partial, left lid especially; Diplopia due to pareses 4th and 6th nerves left side; Nystagmus, horizontal and bilateral; Pupils irregular and somewhat sluggish to light and accommodation.

METABOLIC DISEASES CAUSED BY TISSUE EXTRACT (CYTOST)*

BY FENTON B. TURCK, M. D.,

NEW YORK.

The biological cause of disease, acute and chronic, is the problem that physicians have to give careful consideration.

Much has been written on this all important topic, but, carefully controlled experimental and clinical data have not been presented.

In my extensive experimental and clinical research on "Shock," (Surgical, Traumatic & War), dating from 1895, I have had an opportunity of noting other conditions resulting, which are characterized as "Diseases of Metabolism."

They may be grouped for the purpose of consideration into two classes.

I. Chronic Diseases:

- Arthritis Deformans
- Neuritis
- Paralysis
- Arterial Sclerosis
- Pneumonia Chronic Lobar
- Nephritis, Etc.

II. Prenatal:

- Hereditary debility caused by toxic condition of mother.

It is safe to assume that Arthritis Deformans is by far the most important of the chronic group to clinicians and pathologists.

The pathology of Nichols & Richardson, (Jour. Med. Res. 1909 NS XVI), is refuted by Nathan.

Nathan, (P. Wm., "Arthritis Deformans as an Infectious Disease", Jour. Med. Res. Vol. XXXVI No. 2, May, 1917), says:

"The principle gross and microscopical findings in both acute and chronic joint disease, whether of known or unknown origin, are fundamentally *simply phenomena of inflammatory reaction.*

"They are all of osseous origin. There are certain peculiarities characteristic of so-called Arthritis Deformans which are apparently very difficult to bring into correlation with an infectious origin. Indeed the peculiar deformities of hands and fingers, the acroparesthesia and premonitory weakness and spasm, cannot be ascribed to an infectious focus within the joint at all. It may show involvment of cord and spinal roots, definite signs of peripheral nerve abnormalities,—at most Perineuritis, Ulnar neuritis, etc.

"Joints have cleared up and left the neuritis and other nerve involvements.

"Deformities due to contractures, peripheral and central neural involvements in poly arthritis, account for many forms of deformations, and explain changes in skin, as edema, etc. Neuritis may subside, but muscle shortening remains."

In his dilemma, Nathan further states:

"It must be *assumed* that all poly arthritis, (neuritis), is due to infections, or, that *all deleterious substances* cause fundamentally the same general changes in articular structures. It cannot be denied that there is some foundation for the interpretation of these phenomena, for it is well known that traumatic conditions near, or in the epiphysis, induce the phenomena of inflammation, congestion, vascularization, bone decalcification, and absorption, and, at times, tissue proliferation, which may lead to fibrous or bony ankylosis."

Harding, M. C., in "A Group Study of 300 Cases of Arthritis," (Abs. Jour. A. M. A. Feb. 5, 1921, pg. 405), states that he

"—is not at all convinced that germs in tooth or tonsil are causative factors in joint conditions. Blood cultures proved negative. The absence of Gastro Intestinal disease proved surprising. Vaccines were given and were useless. With non-specific protein, the results were unfavorable."

Reisman, David, (Acute Rheumatic fever and its variants in Children and Adolescence, Jour. A. M. A., May 21, 1921, Pg. 1380), declares

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*Read by title before the State Medical Society of Wisconsin, Milwaukee, Sept. 8, 1921.

"—of all common diseases of childhood to be dreaded, is Rheumatic Fever, because it maims for life."

It is no wonder. The blood-making bone marrow is first attacked. The lungs and heart, secondary to blood stasis, are involved and susceptibility to disease is increased.

In children, Reisman shows, it occurs more frequently at from five to fifteen years, and is common at puberty. Chorea is a sequel.

Articular changes are due to toxins, Reisman claims, rather than to micro organisms. This is strengthened by the sterility of the joint exudates. Secondary anemia quickly develops. Leucocytes are increased to 14,000, 16,000. Many cases of consolidation of the lung, pneumonia, (so-called by Reisman pericarditic pseudo-pneumonia), result as well as papuled erythema of the skin, and so-called rheumatic purpura.

If streptococcus were the cause of rheumatism, one should be able to find these organisms in fresh nodules, but this has not been accomplished.

If tonsils were the cause, their removal might promise deliverance from further attack.

This is not the case, Reisman argues, and in chorea, after tonsillectomy, less assurance against recurrence is offered.

By X-ray, Pacin, A. C., ("A Concept of X-ray Pathology Arthopathy, N. Y. Med. Rec., Feb. 12, 1921, Vol. XCIX, No. 7), has observed that the early and most characteristic changes are in the bone marrow.

"The cartilage has no bloodvessels," he says, "and draws its nutrition from the marrow over which it lies."

Because of the blood stasis in the shaft of the bone, due to tissue toxin in the unprotected child with deficient resistance, the cartilages and other parts of the joint break down; which is a perfect example of autolysis from deficient nutrition incident to the blood stasis in the bone marrow.

Pierce, Frank E., (Trauma of Back and Spine, Surg. Gynecol & Obstet., Vol. 23 NS Sept., 1916), shows that in 758 cases of sprains and contusions affecting the back, that the rheumatic symptoms may continue for years.

Haubold in a "Review on Ankylosis and Contractures of Joints" shows conclusively that the pathological anatomic fixation of joints consists in the formation of nodules and thickening of the tissues which appear in the Roentgenogram in the form of heavy shadows. Osseous growths and lime deposits are also found. "The main point," Haubold maintains, "is that *they are not* the outcome of bacterial invasion."

Chelmonski, Adam, (Press Medicale, Feb. 9, 1921), shows that Osteoposis, Osteomalacia, Rickets and Articular Deformities were frequent in Poland in 1917-1918, during German occupancy when famine was wide-spread.

They often followed pregnancy and were found in rich and poor alike.

Noel Paton, ("Further Facts about Rickets", Jour. A. M. A., June 25, 1921, Pg. 1844), and the Physiologists of the University of Glascow, show by experiments in puppies that vitamines as such are not the factor in Rickets, but simply the same factor we find in all bone and joint diseases.

Local and general inanition will cause tissue breakdown and this poison produces these lesions, which is the exclusive cause.

Berry, J. M., (J. A. Med. Assn. 1916, Vol. XVI, pg. 868), shows that in backward children with low resistance, overstrain of joints due to abnormal activity, causes Traumatic Arthritis and Epiphysitis.

The general reaction, which we call Rheumatic Fever with local joint manifestion, is usually a non-infectious tissue toxemia. No micro organism initiates the disease. They are pure metabolic diseases, and are pathological conditions which Ehrstrom calls purely "Endogenous Factors" due to "lesser resistance." (Finska Lakaresallskapets Handlingar Helsingfors Jan.-Feb., 1921).

When the breakdown is more or less established, all sorts of micro organisms may act as secondary invaders, but this is an "effect" and not a "cause" and does not *produce* the disease, as many writers, without sufficient evidence, have assumed.

It is rather an opprobrium of the medical profession, that it has not found the cause of these diseases, and therefore is still powerless to attack them in a fundamental way.

Although Nathan apparently believes in the infectious origin, he nevertheless states that

"Some *deleterious substance* in traumatic conditions induces the phenomena of inflammation, congestion, vascularization, bone decalcification and absorption, and, at times, proliferation which may lead to bony ankylosis."

The "deleterious substance" to which Nathan re-

fers, and the poison mentioned by Paton and others, is none other than Cytost. (Cytos, a cell). In my researches, I have been able to induce the various phenomena characteristic to joint, nerve, cardiovascular, and other chronic diseases, by injections of varying concentrations of this *Specific* intracellular stimuli.

In my previous articles as early as 1897, (Turck, F. B., "Surgical Shock" Jour. A. M. A. pp. 1160-1163), I drew attention to a substance I then called Shock Toxin. Recently I have given this stimuli the distinctive name of Cytost. I have pointed out in my previous articles, the absolute specificity of this intracellular stimuli, viz (human Cytost to human, cat to cat, dog to dog, etc.), as well as the immunity of one specie to the Cytost of another.

I have also pointed out the various modifications of conditions or diseases resulting from injections of Cytost (specific), at various intervals, in varying concentrations.

High concentration of Cytost injected intravenously or intraspinally cause shock and death in from five seconds to three minutes. Medium concentration at one, two, or five day intervals induces pathological changes which are commonly called Diseases of Metabolism.

Low concentrations injected at five to eight day intervals are physiological in action inducing amitosis growth and active immunity. Mechanical, physical, or chemical injuries produce definite pathological conditions of a constant character, because destruction of tissue results in cell necrosis, cell digestion, and the liberation of Cytost.

In my extensive laboratory research, I have found that the intensity of reaction in the so-called "Chronic Disease" group, we have not only Cytost reaction to consider, but also the degree of Anti-Cytost protection in the individual. (Degree of Immunity).

To illustrate: Two cats of equal age and weight are injected intravenously with high concentration of homologous Cytost. One is chosen that may be called an "alley Tom cat", firm of muscle, battle-scarred and aggressive. The other one that has had the sheltered, over-fed, ill-exercised life of a house or store environment. The house or store cat will die in shock in from five seconds to three minutes. In contrast, the alley cat will suffer but slightly from the same amount and concentration of Cytost.

We have this same condition to consider in our daily practice, be it either general or surgical.

We have many times noted definite pathological conditions resulting in one person that in no way affected another exposed to the same injury.

As an example: Two men are duck hunting. The boat over-turns, and the men are plunged into the icy water. Both are subjected to the same exposure and given the same identical treatment. One will develop pneumonia and may die, whereas the other suffers absolutely no ill effects. The man unaffected is said to have "powers of resistance", which is the explanation generally given.

In our laboratory we refer to this phenomena as "Anti-Cytost Protection".

We have these same so-called "powers of resistance", or actually "Anti-Cytost Protection" to consider in our studies of Arthritis Deformans, which attacks all ages from infants to old persons.

It is a well established fact in my researches that all Chronic Diseases have for their primary Etiological factor the same Biological influence. I have shown, (Turck, F. B., "Atonic Dilatation of the Stomach," etc., Jour. A. M. A. Mar. 26, 1904), in reference to mechanical shock on cell reaction, that, however various the mechanical stimuli may be in influencing protoplasmic activity, they produce their effects by *altering the state of protoplasm.*

This change in state, however, is followed by definite *metabolic structural changes,* which must be sufficiently abrupt to excite activity.

I have also shown, (Turck, F. B., "A Study in Fatigue in Gastric Muscle," Amer. Gastro Enterolog Assn., Wash., D. C., 1903, Med. Standard Dec. 1903), that fresh muscle serum neutralizes the toxic fatigue products of fatigued gastric muscle. The toxins of fatigue caused, as I have shown, Anti-bodies (Anti-Cytost) to form.

In Arthritis Deformans we are encountering the same histological protoplasmic changes as in other diseases.

When the protoplasm of a cell becomes viscous it ceases to function, undergoes self digestion, and liberates its stimuli (Cytost). Cytost is electro-positive in action.

The liberation of this electro-positive stimuli, Cytost, from bruised, lacerated or under-nourished cells, causes agglutination of surrounding cells, with the phenomena of congestion, vascularization

and inflammation resulting, due to the exudate from the hyperviscosity of protoplasm.

This hyperviscosity of cell protoplasm is rapidly transmitted by its action current to the capillaries, and from thence on to the large main vessels.

When the blood becomes surcharged with this poison, it is logical to conclude that the articulations must be involved both directly and indirectly. The blood making organ, the bone marrow, is attacked, and when congestion of the nutrient arteries and efferent vessels ensues, it is certain to produce pathological changes of a definite character.

There is not only the insufficient nourishment to consider, but the obstruction of the veins with the resultant inhibition of function ending in cell autolysis, and subsequent inflammatory symptoms. The action current of Cytost, once started, is a progressive one when not neutralized, or partly so, by its opposite influence, a negative body, Anti-Cytost.

In our experimental work, tissue toxin induced all these local conditions, including teeth and throat disturbances, which were secondary to the primary Cytost reaction.

Various forms of joint diseases, (Arthritis), including multiple exostosis, give about the same etiology, pathogenesis and pathology.

All forms of rheumatic joint troubles may arise from tissue toxins.

It is common following aseptic wounds, as is exostosis following injury.

Experiments using homologous and heterogenous tissue extract have proven conclusively, that only homologous Cytost can induce these various phenomena, as the following table of extracts from protocols will show.

These animals were subjected to intramedullary injections of Cytost. A small opening was trephined in the proximital end of the Tibia and the distal end of the Femur. Injections were made directly into the marrow, with no infection resulting. The antigen was prepared by first incinerating the tissues to a white ash, then sterile water being added, and filtered.

INTRAMEDULLARY INJECTIONS INTO LONG BONES ADJACENT TO JOINTS TO INDUCE ARTHRITIS.

Cat. No.	Tissue used	Amount injected	Remarks
194	Homologous	⅛ c.c. in Tibia ⅛ c.c. in Femur	Marked lameness; joint stiff and sensitive.
195	Homologous	⅛ c.c. in Tibia ⅛ c.c. in Femur	Marked lameness; joint stiff and sensitive.
196	Horse	⅛ c.c. in Tibia ⅛ c.c. in Femur	Negative; no ill effects.
197	Lion	⅛ c.c. in Tibia ⅛ c.c. in Femur	Slight lameness lasting for only two days, due to injury liberating own Cytost.

The foregoing table of a few comparative cases establishes the fact that only homologous Cytost will induce lesions of a definite character. In the spinal cord and fluid we have the most delicate indicator with which to demonstrate. The brain and spinal cord are the most vulnerable, and can be only secondarily affected by capillary reactions that result in asphyxia and starvation of cells.

Injections of homologous and heterogenous Cytost into the spinal cord and fluid at various points is the most positive confirmation of the specific character of Cytost. The following table of extracts from protocols is illustrative. The antigen used is prepared by incineration as for Table No. I. Note the positive results from homologous Cytost, and the negative results from heterogenous Cytost.

INTRA-SPINAL INJECTIONS TO INDUCE PARALYSIS.

Cat. No.	Cytost used	Amt. and point of injection	Results	Remarks
149	Homologous	1 c.c.; last Lumbar space	Complete shock for 30 min. Complete paralysis of hindquarters.	Death in 8 days.
155	Homologous	1 c.c.; last Lumbar space	Complete shock; Coma.	Death in 12 hours.
158	Homologous	¼ c.c.; last Lumbar space	Slight shock, complete paralysis hindquarters.	Death in 7 days.

Cat. No.	Cytost used	Amt. and point of injection	Results	Remarks
192	Homologous	¼ c.c.; last Lumbar space	Shock; delirium; marked inco-ordination.	Used for another injury.
150	Human	1 c.c.; last Lumbar space	Slight delirium; no further symptoms.	Made uneventful recovery.
157	Horse	1 c.c.; last Lumbar space	None.	Apparently normal after recovery from ether.
161	Lion	1 c.c.; last Lumbar space	Slight shock.	Uneventful recovery.
180	Lion	¼ c.c.; last Lumbar space	Marked delirium.	Walking normally 30 min. after injection.

Injections of homologous Cytost into the muscle immediately adjacent to nerve (Sciatic and Ulnar), induced acute and chronic Neuritis, depending upon the concentration and amount injected, and was controlled by heterogenous Cytost with negative results.

We have here a biological factor that is not only specific in character, but typical in its reactions.

Some writers have assumed that infections played a part, but have been unable to produce sufficiently controlled experimental data to substantiate their hypothesis. Others have vaguely suggested that some poison of an unknown origin is responsible, but have not been able to isolate or identify as such, any specific product.

As I have stated in previous articles this specificity of Cytost is constant in *all* life, plant and animal, from Protozoön to Metazoön. (Turck, F. B. "The Biological Cause of Metabolism," Med. Record July 2, 1921. Presented before the Acad. Med. Sec. Nerv. Diseases, Oct. 12, 1920.)

A survey of the salient features of Arthritis Deformans may be made thus, using in part, Honeij's resumé:

1. It presents hereditary factors.
2. It is a disease with well-defined metabolic disturbances.
3. There is no evidence that infection plays a part.
4. It begins early in life, and probably before birth.
5. The long bones and flat bones are affected.
6. Both epiphysis and diaphysis are involved.
7. Not only general Cytost reaction is manifested, but local Cytost reaction due to non-infectious trauma near a joint.

The hereditary tendency or prenatal susceptibility to Arthritis Deformans must be seriously considered as a most important factor. We know that animals, while in their habitat, are never afflicted with Toxemia of Pregnancy or its sequelarum.

Toxemia of Pregnancy and its sequelarum are today becoming of most vital importance. Experiments conducted in our laboratory have conclusively demonstrated that Toxemia of Pregnancy, or "tissue toxemia," is due directly to excess Cytost.

Healthy pregnant cats have been subjected to intraperitoneal injections of homologous Cytost, with the following results:

1. Acute nausea from 30 seconds to two minutes with violent retching continuing from 30 to 50 minutes.
2. Eclampsia.
3. Abortion and subsequent metabolic conditions, such as pneumonitis, gastro-enteritis, peptic and duodenal ulcers, anemia, etc.

The injection of male cats induced the vomiting more rapidly and retching continued for a much longer period.

Injection of immunized pregnant animals not only failed to induce violent nausea, but acted instead, as a further immunizing agent.

Controlled by injections of heterogenous Cytost, (horse, human, beef and lion), no disturbance was manifested.

The effect of Toxemia of Pregnancy, which also poisons the foetus, is particularly manifested in the offspring, shows deficiency in this normal resistance, (Anti-Cytost).

Holland, (Amer. Jour. Dis. Child, July, 1920), claims

"—that Toxemia of Pregnancy is the principal cause of antefoetal death."

The most common expression of tissue toxemia is Rheumatic Fever.

As Honeij sums up:

"—it may be applied to all forms, but varies in clinical picture, due to variations in resistance of hereditary character."

That the offspring born by immunized mothers are less susceptible to specific Cytost is demonstrated by the following table of extracts from protocols.

In my previous article, (Turck, F. B., "The Etiology of Pneumonia and Its Serum Treatment," Med. Rec. May 3, 1919), I drew attention to the effects of Cytost from contact.

The paws af animals were smeared with a paste prepared by combining autolized lung tissue with sterile water. Eighty per cent of the animals died of acute Pneumonia in from forty-eight hours to one week. The following table is of kittens that were placed in and born in cages contaminated with Cat Cytost.

Group I consists of kittens born by non-immunized (normal) mothers that were brought into the laboratory and placed in contaminated cages.

Group II consists of kittens that were born in contaminated cages by actively immunized mothers.

GROUP No. I.

Kittens from non-immunized (normal) mothers unprotected by Anti-Cytost injections.		Kittens from non-immunized (normal) mothers that were partially protected by Anti-Cytost injections.	
Age	Death in	Age	Death in
8 weeks	12 days	8 weeks	17 days
4 weeks	10 days	4 weeks	25 days
4 weeks	12 days	4 weeks	32 days
4 weeks	11 days		

GROUP No. II.

Kittens from actively immunized mothers unprotected by Anti-Cytost injections.		Kittens from actively immunized mothers that were partially protected by Anti-Cytost injections.	
Age	Death in	Age	Death in
Born in cage	8 wks.	Born in cage	6 mos.
Born in cage	57 days	Born in cage	4 mos. 11 da.
Born in cage	18 days	Born in cage	1 mo.
Born in cage	32 days	Born in cage	11 wks.
		Born in cage	8 wks.

Here we have quite conclusive evidence of hereditary immunity. It is interestng to note that the kittens from non-immunized (normal) mothers, that received partial protection, succumbed more quickly to the effects of homologous Cytost than did the kittens from immunized mothers, with hereditary immunity, that received no protection. It is also interesting to note that the kittens born by immunized mothers, and receiving partial protection of Anti-Cytost, lived a much longer period.

The average time of death of any kitten or cat exposed to homologous Cytost contact, is from ten to twenty days, when unprotected by anti-Cytost injections.

The kittens that are partially protected by Anti-Cytost for from four to six months become excellent examples of Premature Senesence. Growth is usually arrested at about two months of age, and various physical changes appear.

The front legs become bowed, and the hind legs drop at the hock. (Rachitis). Ventral Curvature of the Spine, unthrifty (staring) coat, as well as the slow, deliberate motion of an old animal. The facial expression becomes typical to that of a tired and dejected person and it ceases to play as kittens are wont to do. Well-marked lameness, in some articulation is evidenced, and at times all four limbs are involved. On post mortem we find all the characteristic tissue changes of decrease metabolism.

The bones show definite change in structure. (Rachitis, Osteomalacia, etc.), as well as marked articular changes, (Necrosis, Exostosis and Ankylosis), due to the stasis in the bone marrow and its subsequent Cytost reaction; Chronic Fibrous Pneumonia, Chronic Interstitial Nephritis, Sclerotic changes in the Cardio Vascular system, Peptic and Duodenal Ulcers, Atrophic and Necrotic changes along the Intestinal Tract, etc.

Kittens born by animals that have been injected with medium concentration Cytost at pathological intervals rarely live longer than ten days. They are in an unthrifty and weakly condition; bones soft and unable to sustain their weight, as well as having a predisposition to contact with exogenous Cytost, they having been sensitized in their prenatal life by the toxins of the mother.

CONCLUSIONS.

It is logical to conclude that all diseases whether acute, chronic or prenatal, have to their primary etiological factor the same biological influence. I have shown by my researches that disease can be

induced by injections of homologous Cytost, while heterogenous Cytost gives negative results. The incineration of tissue to a white ash, thereby eliminating all carbon, conclusively demonstrates that it is not a foreign protein reaction. The control by injections of incinerated heterogenous tissue firmly established the fact that it is not the effect of chemical salts. Most investigators agree that some "tissue toxin" is the causative factor and that bacterial invasion is always secondary to the primary influence.

A brief summary of the pathology of Cytost activity in arthritis deformans may be made thusly: The liberation of excess Cytost causes hyperviscosity, congestion and stasis, this resulting in deficient nutrition and oxidation, interference with the discharge of toxic products by efferent vessels and inhibition of the bloodmaking function of the bone marrow. This is followed by accumulation of toxins, tissue distension, further liberation of Cytost, cell necrosis, autolysis and inflammatory reaction, terminating in exostosis, osteomalacia, osteoporosis and subsequent anaemia.

The fundamental method by which we may combat arthritis deformans successfully is to first immunize our future mothers against the effects of their own tissue toxins. It is our belief that by so doing we can banish the predisposition of the coming generation to this and other diseases of children and adolescence. Sisson, A. G., (Path., Condition Found. Symp. & Signs of Anaemia, Philippine Journal Sc., Oct. 1920) concludes "that chronic diseases are due to inanition they produce." Inanition is produced as I have conclusively shown, by excess Cytost.

INFECTIONS OF THE KIDNEY.

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Renal infections for many years have been the subject of wide-spread discussion and diversity of opinion. The frequency of surgical kidney as a postoperative complication and its association with various septic conditions throughout the body make its early recognition important, both with regard to the life of the patient and the integrity of the kidney. Brewer's work was perhaps the first to point the way to a clearer understanding of the problems involved.

It is my purpose to present here the facts as gleaned from the literature and to summarize the results of the study of sixty-three cases selected from clinical material at hand.

It has long been known that the kidneys are one of the main pathways of elimination of bacteria from the body. In 1889, Albarran and later, Pernice and Scagliosi, showed that bacteria could be passed by the kidney and produce no change. Typhoid and colon bacilli and the various pus-producing organisms have been reported as having been found in various studies on the urine. Lumiere and Abrami demonstrated the typhoid, Rovsing the colon bacillus, Walschmann, Heyer, Kramer, Buday and Wyssokowicz, Rolly, and Cunningham the tubercule bacillus. In 1894, Posner and Lewin, experimenting with rabbits, by sealing the lower bowel and ligating the urethra, found bacteria in the urine. Hübner demonstrated bacteria in the urine in patients with chronic constipation. Trump showed Bacillus coli in the urine of fourteen of seventeen infants with intestinal disorders. Biedl and Kraus, and Klecki have shown in male subjects that colon bacilli appear in the urine in from two to twenty minutes after injection.

That the kidneys eliminate bacteria was well known but under what conditions these same bacteria produced renal damage was not understood until Lannelongue first emphasized the relationship. In 1891 Israel and Jordan added additional evidence and reported cases of severe renal damage due to systemic infection and localized abscess formation. Since then the literature has contained numerous case reports of renal infection associated with septic foci throughout the body.

ROUTES OF INFECTION

There are at present two generally recognized avenues of entrance of infection to the kidney aside from those due to trauma: (1) Hematogenous, (2) ascending, and (3) lymphogenous. Of these the hematogenous route in concluded, by most observers, to be the most frequent cause of renal infection. At first the ascending route of infection was believed to be the only mode of infection; Guyon and his disciples were the strongest adherents of this theory. Guyon and Courtade, in

1894, quoted experiments to prove that two factors protected the kidney from infection from the bladder: (1) The downward current from the kidney, and (2) the protective mechanism of the intravesicular portion of the ureter. In 1889, Albarran stated that the necessary factors for ascending infection were prostatic enlargement producing urinary retention, vesical tumors, urethral strictures, new growths, or severe injury to the ureteral orifice. Von Frisch suggested as an additional cause, spinal cord disease, or paralysis of the internal sphincter mechanism by the injection of particles during bladder irrigation, and that such particles are aspirated into the ureter is reported by Volcker who observed during the course of cystoscopic examination small particles being drawn into the ureter. Lewin and Goldschmidt showed that experimental lesions could be produced in the kidneys by ligating the ureter. In 1890, Guyon and Albarran demonstrated that virulent cultures injected into the healthy bladder caused no infections, but if the urethra was ligated infections appeared. Zembrinoff explained the cause of this as due to antiperistalsis. This was later disproved by Guyon and Albarran who injected charcoal particles, and who claimed that the time required for these particles to reach the kidney was too long to hold antiperistalsis responsible as a factor in the infection. Ajevoli explained the cause of ascending infection to be due to the laws of hydrodynamics; that is to say, while the main current from the kidney is downward, there exist counter currents which slowly carry infection upward. Bond then demonstrated the possibility of organisms travelling up the mucous passages by an ascending current without infecting the tract. He states that any obstruction to the flow further increases these currents and he attempts to explain the greater frequency of pyelonephritis in the right kidney of females on the theory that the obstruction is produced by its greater mobility.

When we consider the type of lesion that is found in the various renal infections it becomes difficult to assume that the ascending mode of infection has any importance as a cause. The ascending type of infection will not explain the glomerular lesion of coccus origin, for the cortex of the kidney is the only part of the genito-urinary tract in these cases that shows any pathology. If pyelitis and pyelonephritis are of ascending origin, then cystitis should be found more frequently, and statistics are adduced to show that cystitis is present in only from 6 to 25 per cent of the cases. Cystitis is a rare finding in female children, but pyelitis is a frequent complication. Furthermore, the predominating bacillus is the colon bacillus, while in the urethritis of children the staphylococcus is the infecting organism in 94 per cent of the cases. The more logical cause of cystitis would be the result of excretion of bacteria. Nature has created a natural barrier against ascending infection by the valve-like orifice of the entrance of the ureter into the bladder, a mechanism which, unless destroyed by disease, effectively prevents the reflux of infectious material to the kidney. The initial presence of cystitis would not rule out the hematogenous route. Sampson has shown that there is a continuous anastomosis of the ureteral arteries from the kidneys to the bladder, and that by injecting coloring matter into the renal artery the whole length of the ureter and vessels about the ureter become injected, showing a close relationship of the blood supply. Further, the intimate connection of the lymphatics of the bladder and the pelvic lymph-nodes is brought out by Sakata; this shows the opening up of a new route of entrance of infection to the blood stream and thence to the kidney. That an ascending infection may exist is not denied, particularly when the protective mechanism at the ureteral orifice has been destroyed by disease. When the resistance of the healthy bladder against disease, and the secondary role that cystitis plays in the disease of the genito-urinary tract are remembered, ascending infection as a mode of renal infection loses the importance once attached to it by Guyon and his school, and hematogenous infection assumes the leading role in kidney infections.

THE LYMPHATIC ROUTE.

Recently several writers, notably Sweet and Stewart, and Eisendrath have brought forward evidence seeming to prove the importance of the lymphogenous route over the hematogenous. Their work is based on the histologic findings of Mascagni and later, Sakata. Mascagni first showed that the lymphatics of the upper ureter drain into the lymphatic system of the kidney pelvis and that the lymphatics of the lower ureter drain into the lymph-nodes of the pelvis proper. Sakata confirmed these observations. A synopsis of his work is as follows:

1. There is no mucosal or submucosal network of the lymph-vessels.

2. In the muscle sheath and in the external surface of the ureter are well developed lymph-vessels that are continuous and parallel with the blood-vessels.

3. The different lymph-vessels are present chiefly in the central and the middle portions of the ureter and they pass to the lumbar glands.

4. The lymph-vessels of the lower ureter pass to the hypogastric gland or to the lymph-vessels of the bladder.

5. In the upper section the lymph vessels which pass into the glands directly are not demonstrable. If demonstrable they pass into the glands that lie above and beside the ureter.

6. The lymphatic systems of the kidney and of the bladder are not directly connected.

Franke has shown that there is a lymphatic connection between the capsule of the kidney and the ascending colon and probably the descending colon. Bauereisen states that following gynecologic operations the kidney may become infected by the lymphatic route; he shows several sections of the ureter to prove that there is evidence of lymph connection between the bladder and kidney and that these lymphatics show signs of inflammation. Sweet and Stewart conclude from their work that ascending infection travels through the lymphatics and not through the blood-vessels because they maintain that the veins of the bladder and ureter open into the general circulation and not into the kidney circulation; and further, that even when the lumen of the ureter is open to infection they have not found the infection in the mucosa but in the lymphatics; also, if the lumen is experimentally closed to infection the process extends to the kidney, but if the lumen is permitted to lie open and the lymphatics are closed to infection, there is no ascending infection. Sweet and Stewart believe with Bauereisen that postoperative kidney infection travels by the lymph-stream. The intimate relationship of the lymphatics to the blood-stream has evidently not been considered in this work, nor has the fact that the lymphatic connection of the bladder and kidney is not continuous, as has been shown by Sakata. Sufficient experimental evidence has not been brought forward to prove that the lymphatic route possesses any importance as a cause of renal infection.

THE HEMATOGENOUS ROUTE.

The factors that predispose kidneys to infection are numerous: Depressing illnesses, toxemia, excessive mobility, and spinal cord lesions are given by many writers as potent causes. Various intestinal disorders, trauma, stones, prostatic enlargement, previous infections, ureteral and urethral strictures, are all factors that tend to lower a kidney's vitality, so that it becomes a fertile field for organisms floating in the blood-stream. In twenty-nine of our series it was possible to trace a predisposing cause in previous illness which, if not a directly exciting factor, was at least of a predisposing nature, in lowering the kidney resistance.

Numerous septic conditions, influenza, scarlet fever, pertussis, typhoid, paratyphoid, appendicitis, and carbuncles, have been reported as associated with renal sepsis. Tonsillitis is a prominent feature in our series. Bacteria from the tonsils of one patient, a man 28 years of age, showed specific localizing effects in the kidneys when injected into a rabbit. Cases following empyema, pulmonary abscess, arthritis, osteomyelitis, peritonitis, rectal abscesses, septicemia, and septic teeth show a pronounced connection through the blood-stream with any septic focus in the body.

The bacteria concerned in the production of renal infections are the Staphylococcus aureus, the pneumococcus, streptococcus, Bacillus coli, communis, typhous, paratyphous, tuberculosis, and proteus Hauser. Jeffreys, reported 121 cases, of which 67 were traceable to the staphylococcus, 10 to the streptococcus, 3 to the pneumococcus, and 4 to miscellaneous bacteria. Other writers give 90 per cent of all organisms found as Bacillus coli and 10 per cent as staphylococci. The bacteria differ markedly in the types of lesions produced. Cocci show marked predilection for the glomeruli, the Bacillus coli and the tubercle bacillus for the convoluted tubules of the kidney. Under what conditions do these organisms produce disease? The two required causal factors of renal infection of hemic origin are: (1) Pus-producing organisms, and (2) impaired local resistance. The first is supplied by a bacteria-laden embolus from a septic floating in the blood-stream, and the second is supplied by any of the predisposing causes which I have mentioned. A healthy kidney has a natural immunity as has any other organ in the body, to resist the inroads of disease. An example of this is

its daily excretion of bacteria in typhoid fever or diphtheria and its apparent uninvolvement. The kidney when weakened by trauma or disease, either systemic or local, becomes exposed to the action of specific localizing bacteria.

Albarran, Pernice and Scagliosi, in 1889, demonstrated that under certain conditions moderate quantities of organisms might circulate without producing gross lesions, while under other conditions they may produce changes varying from acute glomerular nephritis to complete necrosis. Israel, in 1891, called attention to the possibility of renal suppuration due to microorganisms entering the blood-stream, or of local infections such as furuncles, paronychia, carbuncles, etc. Later, Semon and Johnson called attention to the fact that the disease is often unilateral and curable before the second kidney is attacked. Brewer's experiments were the first to indicate the conditions necessary for bacteria floating in the blood-stream to produce renal damage. He showed that none of his control animals whose kidneys were not damaged developed renal diseases when inoculated intravenously. Of 16 animals that had received inoculations and injury to the kidney, 11 showed surgical lesions of the kidney. In 8 cases the lesions were unilateral and in 3, bilateral. In 2 of the 3 the lesions were mild, in the third they were equal in extent and severity in both kidneys. The surgical trauma had so lowered the vitality of these kidneys that their natural resistance was destroyed and the circulating bacteria found a ready field for growth and damage, a condition that perhaps holds in hydronephrosis, as might be indicated in the experiment of Lucas and Burton-Opitz which showed that under conditions of increased pressure in the renal pelvis the renal circulation is diminished and the susceptibility to infection is higher.

PATHOLOGIC LESIONS.

Once given a foothold the organisms are specific in singling out the structures of the kidney for damage. Thirty five of the present series were of the coccus group, and showed definite cortical abscess formation a condition that was verified by pathologic examination after nephrectomy, which was done in all but two cases. The condition starts, not in multiple simultaneous infections throughout the kidney, but in the inflammatory reaction around the glomeruli from an embolic focus in the vessels. The surrounding tissues are soon infiltrated with the products of extending inflammations and other areas are involved secondarily by the infectious material progressing to adjacent tubules and lymph spaces. In the cortical abscess type the kidney is usually enlarged, reddened and congested and bleeds easily, or it may be small, especially if the involvement is extensive. Throughout the substance in the early stages are separate foci or abscesses, miliary in type, surrounded by the usual products of inflammation. Usually these abscesses are multiple, but they may be single and large. In many of our series they were of this latter form; the abscess formation in one case in particular was so localized that in the hope of saving the lower and functioning half of the kidney, heminephrectomy was done. The part behind functioned perfectly, as was demonstrated by ureteral catheterization, but the infection progressed and it was necessary, because of further abscess formation, to remove the remaining portion of the kidney. These abscesses may enlarge, coalesce, and even rupture, and thus give rise to perinephritic abscesses. Usually, in order to go through the cycle, the patient's resistance must be high and the virulence of the infecting organism slight, since toxemia occurs and death ensues frequently before the cycle is complete. The process may not be localized however. The pathologic picture may be entirely different, as in the diffuse inflammatory changes produced by the presence of an organism of low virulence and toxicity, as for example, the colon bacillus.

The foregoing pathologic description is typical of the staphylococcus renal infections, but when colon bacilli alone are present the change in histologic manifestations is marked. The kidney is enlarged, reddened and congested; the redness and congestion become more marked when the capsule is stripped. A diffuse mottling is frequently present. No solution of tissue is found as in the coccus infections. The organ is moderately firm and presents irregular, circumscribed areas varying from red to pale yellow in color, involving the cortex and the pyramids. As the process becomes chronic the redness disappears and the organ becomes paler. The invasion of the kidney from the pelvis, in the lesions caused by the colon bacillus, takes place along the lymphatics which run from the papillae to the capsule and from a network around the tubules and blood-vessels. Postmortem work on children showed involvement not only of

the renal pelvis, but also of the parenchyma, and hence the term "pyelonephritis" and not "pyelitis" is best calculated to describe the lesions found. Processes at first are unilateral, unless toxemia is so severe as to carry off the patient, but later they become bilateral if surgical interference is not resorted to. Lesions that in the beginning are bilateral are usually a part of a general pyemia or septic endocarditis. Microscopically such processes as described show plugging of the smaller arteries and vessels by groups of organisms surrounded by a zone of round-cell infiltration. When larger vessels are involved, triangular infarcts are present, and when capillaries only are involved minute abscesses are seen throughout the cortex and beneath the capsule. From this focus, the process spreads, pus forms, and abscess formation is the inevitable sequence. The destruction of the bacteria in these lesions is marked, especially in the glomerular or coccic type because the kidney glomerulus possesses strong bacteriolytic properties; for this reason we may find patients with coccus infection who have survived the initial toxemia in which the lesions may become sterile or, what frequently happens, the abscess formation becomes absorbed and small cysts form. In some cases the deposition of lime salts in these foci give confusing X-ray shadows.

In the streptococcus group of renal infections of hematogenous origin, the lesions are in and about the glomerulus; in all cases the cocci show a marked specific affinity for the glomerulus and its convolutions. Petechial hemorrhages are found in and about the glomeruli. Hyperemia and edema of the interstitial tissue is a marked feature. In the glomerulus itself are observed the products of acute inflammation, namely red blood corpuscles and leukocytes, eosinophilic and neutrophilic in character, casts and desquamated epithelium. The blood vessel changes may be pronounced. The diplostreptococcus is found in the urine of these cases. In addition, the colon bacillus may enter into the picture. In the chronic type there may be diffuse or irregular contraction of the kidney substance which may exhibit a smooth or granular surface. The capsule is thickened and adherent, and when stripped may reveal many small cysts. Microscopically, a marked diffuse proliferation of fibrous tissue and atrophy of tubules may be seen. The glomerulus becomes fibrous, and eventually is transformed into a small nodule of connective tissue. Blood vessels and blood show extensive changes. There is an evident association of these conditions with septic teeth and tonsils. In the other forms ulcerative endocarditis is usually responsible. Thirty-six per cent of our series gave a previous history of tonsillitis, and 64 per cent had a definitely traceable focus in the body.

The tuberculous type of lesion is usually associated with a healed or active pulmonary lesion The bacillus tuberculosis, like the colon bacillus, shows tendency to involve the glomerulus, but has an affinity for the convoluted tubule. In the beginning a closed lesion is produced and shows no evidence in the urine. Later it reaches the renal pelvis by ulceration. Pyelitis is early and marked about the tips of the pyramids. The bacilli travel toward the cortes, following the intratubular spaces, and cause abscess formation.

SYMPTOMATOLOGY.

The symptomatology of the various pathologic states of the infected kidney that have been enumerated is fairly characteristic. Two types of symptoms are recognized: (1) The fulminating, or more virulent type, which usually proves fatal before any renal symptoms make their appearance, or were even suspected. The clinical picture is one of acute general toxemia and the local manifestations are slight; (2) the non-virulent type which tends to spontaneous recovery without any serious renal damage.

The coccus group of renal infections are usually of the more virulent, while the colon type tends to assume the non-virulent form. In our series the coccus infections, being of the chronic type, were not typical; only one of them was of the fulminating type. The cases of the colon group were decidedly non-virulent. The symptoms of atogenous renal infection, as we observed them, and as reported by others, are frequently not typical, but resemble those of the typical abdominal crises, particularly gallbladder or appendiceal syndromes. The attack may or may not be ushered in by a chill, and the temperature ranges from 101° to 103°. Pain was a constant symptom in all of our cases, referred to the right side of kidney region. Muscular rigidity was a fairly constant finding, and very frequently confusing. Costovertebral tenderness was spoken of as a pathognomonic sign; when present it is diagnostic of renal infection. It was observed in only 29 per cent of the cases, cases that

were later verified by operation. Cystitis was present in 60 per cent of the colon type of cases studied. In the surgical series of the coccus type, it was found in 25 per cent,—a finding due to the chronic type of the clinical material at hand. The urinary findings in a typical case are diagnostic of the conditions present and point the way to the treatment indicated. The coccus infections in the early stages are essentially glomerular and hence show no changes in the urine, while the colon bacillus, acting on the convoluted tubules shows distinct changes in the urine,—albumen, pus, red blood corpuscles, and phenosulphonephthalein changes, with the finding of the colon bacillus in the urinary culture. The urine, owing to the great motility of the colon bacillus, was very turbid and highly acid as the colon bacillus does not live in alkalin medium.

MIXED TYPES OF INFECTIONS.

The differentiation of the type of infection is important as the colon bacillus infections are rarely, if ever, surgical, while the coccus infections are invariably surgical. The chief points of difference are the toxemia and urinary changes, that is, the patients with colon infection are less toxic, and show marked urine changes. A mixing of the type of infection often occurs and is confusing. The Bacillus coli and the coccus, and Bacillus coli and tuberculosis, are sometimes superimposed. Colon and coccus infection give a picture of colon infection plus perinephritis, but we are guided aright by the urinary picture. Tuberculosis with colon infection grafted upon it gives a colon infection picture which is frequently difficult to differentiate except by the aid of animal inoculation and urine staining.

TREATMENT.

When the diagnosis of coccus infection of the kidney is made, treatment is recognizedly surgical, and usually a radical removal is indicated. Conservatism is fatal in treating these cases as delay may endanger the life of the patient and the integrity of the kidney not yet diseased. The operation of choice is nephrectomy, which was performed in all our cases but two. Decapsulation may be a life-saving procedure especially if the kidney involvement is not extensive; the abscesses are drained easily by stripping the capsule. Drainage may be practiced as an emergency method, especially in perinephritic cases, but it is usually necessary to perform a secondary operation for the removal of the kidney. The effective treatment of tuberculosis of the kidney is a radical removal, since 85 per cent of tuberculosis of the kidney is unilateral in the beginning, and 25 per cent become bilateral in less than three years time, and hence inoperable. In the cases of colon type of infection the conservative treatment is medical. Urotropin in large doses, or salol, as recommended by Rovsing, combined with pelvic lavage in chronic cases, have given good results. Urinary antiseptics act well in colon infections because of their accessibility to medicinal measures, a fact which does not hold true in the coccus type of glomerulus type of infection. Autogenous vaccines should receive consideration in these chronic colon cases that do not respond to pelvic lavage. The colon cases are very apt to become chronic and very resistant to treatment. The renal damage develops very slowly, the histories of the cases last over a period of 20 years; they are usually of bilateral involvement. The keynote of the treatment of colon infection is conservatism, using medicinal measures to preserve the kidney function. In the coccus type of renal infection the only successful form of treatment is the radical surgical procedure.

CONCLUSIONS.

From the review of the literature and the observation of our own cases, conclusions may be drawn as follows:

1. Ascending infection plays a secondary role in kidney sepsis.

2. Lymphatic infection has not been experimentally proved to be of any significance as a cause of infection.

3. The bacteria that are most frequently found are: Bacillus coli, Baccillus tuberculosis, Staphylococcus aureus, and streptococcus.

4. The pathologic lesions are of two types:

   a. Cortical abscesses of the coccus type.

   b. Diffuse inflammatory changes of the pyelonephritic type caused by the colon bacillus.

5. The colon and the tubercle bacillus show affinity for the convoluted tubules. The coccus in-

fections show a specific localization about the glomeruli.

6. The characteristic symptoms are pain in the right side and in the kidney region, temperature of 101° to 103° F., local costovertebral tenderness, combined with severe toxemia and no urine findings in the cases of typical coccus infection, little or no toxic effects and marked urinary changes in cases of infection with the colon group.

7. Treatment in the coccus group is essentially surgical, nephrectomy being the most logical measure. In the colon group conservatism is practiced with the use of urinary antiseptics, pelvic lavage, and autogenous vaccines.

Fig. 3. (Case 76870). Multiple cortical abscess formation. Widespread destruction.

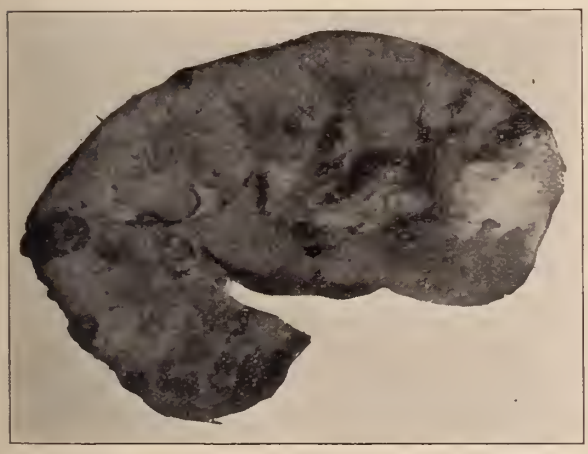

Fig. 1. (Case 32421). Multiple hemorrhagic infarction.

Fig. 4. (Case 95778). Multiple cortical abscess formation.

Fig. 2. (Case 43962). Single cortical abscess formation. The type that becomes perinephritic.

Fig. 5. (Case 248609). Diffuse inflammatory change. Pyelonephritic type. Due to Bacillus coli.

Fig. 6. (Case 2933). Mixed colon and coccus infection. Cortical abscess with pyelonephritic change.

Fig. 7. (Case 12973). Diffuse abscess formation, each abscess distinct and showing a separate embolic infarction as a cause.

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OBSTETRICS IN RURAL COMMUNITIES*

BY B. J. WADEY,

BELLEVILLE.

The practice of obstetrics in hospitals, with everything at hand and conveniently arranged, and in general practice or in the rural communities, are two different propositions. It is not necessary for me to tell you anything about hospital obstetrics, as we are all clear on that, and have that happy scene before our mind's eye through all its different stages.

But the other picture is entirely different and one with which most of us have to contend, and that is delivering a woman in the private home, where, in a large per cent of cases, things are not to our liking. But even here I believe that we are safe, as it seemingly has been proven time without number, that a woman is immune to her own dirt. If there is infection it is foreign and someone is to blame. So I feel that even with these conditions present we must be just as careful in our preparation as in cleaner surroundings, to prevent the conveying of germs which are not already present.

In rural communities the obstetrical outfit must be complete, as we must be prepared to meet with any type of case. Of the equipment I will speak only of the forceps, of which I feel that there should be three, to wit: the long, short and axis-traction. The latter I consider just as important and necessary as the others. The short could be dispensed with, yet it is a very handy instrument to have. But the axis-traction forceps is a true necessity. In any high application the axis-traction will markedly lessen our birth mortality of infants. I have not always had the forceps but since I have, I am thoroughly convinced that my infant mortality rate would have been less if I had procured one before.

The prenatal care of women is just as important to the final outcome as the labor itself. By it we can keep watch of and guard against the toxemias which not only cause a slow recovery but often lead to conditions which become chronic. There is no need of going into this farther as it is a well worn subject, thanks to the fact that most women have become educated to the necessity of having their progress under the observation of a physician.

A few words relative to the use of corpora lutea

*Read before the Dane County Medical Society.

in the vomiting and nausea of pregnancy will not be amiss. To be of practical benefit in severe cases it should be given in doses of 2 c.c. intravenously, at intervals of two, three, four or five days. It will relieve, and your patient will seemingly act as if she had a new lease on life. Even after the first treatment they will have a desire for food, their melancholia or seeming distracted attitude disappearing, and they again become hopeful and look forward to the final outcome of their pregnancy with an entirely different mental aspect. Dr. Hirst, a firm advocate of its use, and who has done as much as anyone else to perfect the dosage and the technic of giving, advises a minimum dosage in the whole treatment of 12 c.c. in individual doses of 1 or 2 c.c. With a less amount there is a great probability of a recurrence, the relapses being harder to control.

As to the types of presentation in delivery, there is one which we very often have to contend with, which gives considerable trouble, and that is the occipito-posterior. Oftentimes, owing to a large amount of adipose tissue, when labor has lasted for some time, they are very difficult to recognize. Here, when there seems to be no progress, we can almost gamble that this is the type of case that we have to deal with. Because in the true occipito-anterior case there will be some progress, providing the pelvic conditions of the mother are not offering any obstruction, a condition which should be recognized by measurements made at the time of your vaginal examination. If these presentations can be recognized and corrected they will not give us any great amount of trouble. But owing to the conditions above mentioned, if you have failed to recognize the true type of case, it will be very difficult to correct the position, and many times impossible. In the latter case, the axis-traction forceps is a true blessing. In applying any other type of forceps you can not make proper traction, either in the amount of traction or in the proper angle through the strait from which you are endeavoring to deliver the head. With the ordinary forceps you are either drawing the head against the pubic bone or are endangering the perineum by your downward pull. By trying to avoid the injury to the perineum the application of the blades is such that it is very easy for them to slip, which I can assure you gives one a very unpleasant sensation, as you know not what injury you have caused, either temporary or permanent, to the little head which you have in the grasp of those blades.

Be equipped to cope with this type of case and I firmly believe that we will see our infant birth mortality rate becoming smaller.

I have often wondered what were the true conditions which have caused such an excessive birth mortality of infants in our midst, and from what little experience I have had it has often occurred to me that it was probably of the above type and hasty obstetrics. In fact it has often seemed that the latter has more to do with the maternal and infant mortality than anything else. Even surroundings do not contribute as large a factor. When you confine cases in surroundings where you don't want to sit down or touch anything, and see them come through in fine condition, you can not wonder at the above conclusions.

Of the truly abnormal cases I have not had such a large number. One face presentation I saw in counsel and it was easily corrected by forcing flexion, with the fingers of one hand back of the occiput and the other hand on the fundus of the uterus. The rest of the delivery was uneventful. One placenta previa I also saw in counsel, and here we punctured the membranes and brought one lower limb down through the opening and cervix, acting as a wedge and preventing further hemorrhage.

Recently I had a case in which the superior strait was narrow and more or less circular in form, which gave me considerable trouble. By using the axis-traction forceps I was able to deliver the head, but had considerable difficulty in delivering the shoulders. I worked for five or ten minutes before I succeeded in even getting them engaged. There must have been some injury to the nerves supplying one arm, as it was limp and useless for some time, but from last reports it is all right—no fracture or dislocation.

In one case which I had this sprnig there was everything with which to contend. A primipara, with premature rupture of the membranes, a normal presentation (o-l-a), a very slow engagement in which I finally had to deliver with forceps, with a resulting first degree laceration of the perineum, post partum hemorrhage, and an adherent placenta. In the third or fourth month of pregnancy in this case the patient received an electric shock which extended down one side, throwing her to the floor, after which there was a slight uterine hemorr-

hage for several days, the abdomen was discolored, (black and blue) and she was considerably shaken up both mentally and physically. The adherent placenta I attributed to the above. As to the post partum hemorrhage, I learned that she comes from a family of bleeders.

Considering everything, the condition of mother and child was even better than I dared hope for, and after a somewhat slow recovery of the mother we can now report them both doing well.

Of five cases of eclampsia, one at the seventh month of pregnancy, two during labor, and two post eclamptic, the one at the seventh month was eventually sent to the hospital, and failing to respond to treatment, a caesarean was performed, but the baby lived only two or three hours. This woman is an epileptic, and I have often wondered whether that had anything to do with her eclampsia. The kidneys did show envolvement.

The two eclamptic cases occurring during labor, the head being on the perineum, I anaesthetized and delivered immediately, which I realize is contrary to the newer methods of treatment as advised by Stroganoff and others. All of these cases were kept under the influence of chloral and morphine until we could eliminate the toxic products with hot packs and through the bowels and kidneys.

Eclamptic cases seemingly present two different and distinct pictures, or types. In the true nephritic there is considerable oedema, with lessened elimination from the bowels and kidneys, but with proper care and treatment they recover, or apparently so. But in the other type, where we have an icteric tinge, a general muddy and sluggish appearance, patients present almost the picture of acute yellow atrophy of the liver, and here the prognosis is generally bad.

The other, or the first type mentioned, I have no great dread of as I believe we can do them a great good and with prenatal observation of the case, we can lessen or prevent the eclamptic attacks.

In one of the post-eclamptic cases the skin of the child was more or less lacerated, and wherever there was any friction or rubbing the cuticle was entirely denuded. We kept it swathed in olive oil and cotton for some time. A new epidermis formed, but with a well developed and persistent case of general ichthyosis, which she has at the present time. Never having been able to find anything in medical literature relative to this condition, I drew my own conclusions and attributed it to some probable condition or reaction of the amniotic fluid. I have seen one case since but it was not as severe and the final outcome was favorable.

Prolapsed funis: two cases. In the first one I was up against it and did not know what to do, but came to the conclusion that I could not allow the head to engage and impinge on the cord, shutting off the foetal circulation. I then did a podalic version and delivered without any further trouble.

My second case I had attended before, and as her labors had been very easy, I thought that I could apply the forceps and deliver before there was any real danger. But my guess was wrong, and as I could not deliver as rapidly as I expected, we had a dead baby.

Multiple Pregnancies: twins. In two cases we had a little trouble. In one of them, with a very large superior strait, we had presenting the head of one child and the foot of the other, with both membranes ruptured. Being difficult to push up and keep the lower limb in place, I attempted to deliver this child first, but on account of the roomy pelvis, the head of the second child obstructed the delivery of the first, their heads being locked, and consequently the first child was dead. This was contrary to the usual conditions, i.e. the mortality being higher with the second child in twin pregnancy.

In the second case, a young woman nineteen years of age, we had presenting the breech in one child and a cephalic in the second. As labor had continued for some time without much progress I used the hook and made a fairly easy delivery. With the second child, there being very little progress in thirty minutes, I applied the forceps and delivered. The need of interference here is the possible separation of the placenta.

Pituitrin I began to use when it was first heralded as a sure preventive of all our retarded second stages. But "Fools will enter where angels fear to tread," and I was not long in becoming afraid of it so I completely discarded it. At first we were led to believe that 1 c.c. was the proper dose, but I found with that dosage the cervix contracted just as firmly as the fundus, and with each pain it was like coming up against a stone wall. I am again using it, in two or three drop doses, in cases that I am sure of and know that there is no obstruction at the outlet, with good results. It is the one thing in post partum hemorrhage.

Puerperal sepsis: About fifteen or sixteen years

ago I had five cases, one right after the other, with one death. None of them were severe except the last, or fatal one. I was ready to throw up the sponge. Scrubbing, boiling and disinfecting until my hands were sore, I finally threw away my grip, along with everything else that I could not boil or otherwise disinfect, and have had no trouble since. In all of this type of cases some one of the attendants are to blame, and in these particular cases I was the culprit.

Just a word in regard to the treatment of this condition, which is largely symptomatic. Secure good drainage by elevating the shoulders and body to more or less a half reclining position, and do very little if any meddling with the infected area.

All lacerated perineums I suture before delivering the placenta and tie afterward, using a suture material which absorbs at about the tenth day.

I remember once of listening to a paper read by Dr. Dorothy Reid Mendenhall, at one of the State Medical Society meetings, on "Natal and Prenatal Conditions in Wisconsin," in which she gave the maternal and infant mortality in this state. It certainly was astounding, and the larger per cent of this was attributed to the rural districts, not by midwives, but by practicing physicians.

I thought to myself that there was something wrong somewhere, but what is it, and where is it? Physicians with a larger mortality rate than midwives! I came to this conclusion—that midwives are content to sit by their cases, letting Mother Nature do the work and reap the glory, while we physicians, with a license to do and with the necessary instruments at hand, are too eager to hasten the labor and get away. I will admit that it is a very hard thing to sit by a case when, possibly, we have any number of other patients demanding our attention. But a physician desiring to do obstetries must give all the time that is necessary.

This is where we are handicapped in the rural communities. In your hospitals and possibly in your city practices you can have some nurse watching your case, and to call you only when needed. In the country, when possibly we are miles from our patient, when we arrive we are expected to stay, and I do not question the right of the people to demand it. I sincerely hope that the time is not far distant when each rural community might have its maternity home. The farmer's wives can be educated to this and would get far better care than some of them do at the present time—I am not saying all, because some of them are excellently prepared for and are taken care of as well as anyone could be in a private home.

Being in touch with the communities near, I know that our mortality rate is not high. In the last five or six years my mortality has been two infants and one mother, out of about three hundred and fifty or sixty cases. The mother was a para V, labor normal and not difficult. I left her feeling fine about an hour and a half after the baby was delivered. I was called back in a short time and found her in total collapse. There was no severe hemorrhage and no indications of an internal hemorrhage.

In conclusion permit me to say that I have sketched the conditions which confront us from day to day and I think it behooves us, as practicing physicians, to give these mothers the best there is in us, even better than we have before. Let us lower our maternal and infant birth mortality.

But, "Why Worry", with the present influx of chiropractors, etc., in our midst? Ere long we will merely have to make a few passes up and down the spine, give a few vigorous jabs somewhere about the lumbar region, and the ordeal will soon be happily ended—that is, if we even get the chance.

TABLES OF FEES AUTHORIZED AS A GUIDE FOR SURGICAL AND OTHER PROFESSIONAL SERVICES. BUREAU OF WAR RISK INSURANCE.

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PART.	FEE.
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Metacarpal, one	20.00
Metacarpal, two or more	25.00
Radius or Ulna	45.00
Radius and Ulna	75.00
Humerus	80.00
Toe, one or more	15.00
Metatarsal, one or more	30.00
Tibia	75.00
Fibula, simple	40.00
Fibula, Pott's Fracture	85.00
Femur	150.00
Malar and nasal bones	50.00
Clavicle	40.00
Scapula	50.00
Ribs, one or more	35.00
Patella	90.00
Pelvis	100.00
Sternum	40.00
Skull	85.00

PART.	FEE.
Vertebra	125.00
Sacrum	150.00
Maxilla Inferior	50.00
Hyoid bone	30.00
Bones of face	40.00

Note: Including 4 weeks routine after care exclusive of hospital fee, anaesthetics and X-ray—for cases not unusually complicated.

COMPOUND FRACTURES.

Finger, one	$25.00
Fingers, two or more	35.00
Metacarpal, one	35.00
Metacarpal, two or more	50.00
Radius or Ulna	75.00
Radius and Ulna	100.00
Humerus	100.00
Toe, one or more	30.00
Metatarsal, one or more	40.00
Tibia	100.00
Fibula	60.00
Femur	200.00
Malar and nasal bones	60.00
Clavicle	75.00
Scapula	75.00
Ribs, one or more	80.00
Patella	125.00
Pelvis	200.00
Sternum	85.00
Skull	150.00
Vertebra	160.00
Sacrum	200.00
Maxilla Inferior	85.00
Hyoid bone	75.00
Bones of face	60.00

Note: Including 4 weeks routine after care exclusive of hospital fee, anaesthetics and X-ray—for cases not unusually complicated.

DISLOCATIONS.

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Hip	100.00
Knee	100.00
Patella	50.00
Ankle	75.00
Nasal cartilage	20.00
Pelvis	150.00
Rib	25.00
Thumb	15.00

PART.	FEE.
Vertebra	150.00
Maxilla Inferior	20.00
Epipyseal, separation of bone traumatic treatment of	45.00

Note: Including 4 weeks routine after care exclusive of X-rays and anaesthetics.

AMPUTATIONS.

Fingers or toe, one	$ 25.00
Each additional finger or toe	10.00
Metacarpal or metatarsal, one	35.00
Each additional metacarpal or metatarsal	10.00
Upper arm	80.00
Forearm	75.00
Hand	75.00
Thigh	120.00
Leg	90.00
Foot	75.00
Stump, major, re-amputation	75.00

Note: Including 2 weeks routine after care in uncomplicated cases.

ABCESSES.

Superficial	$ 15.00
Deep	50.00
Epi cranial	40.00
Intra cranial	150.00
Thoracic (Empyema)	150.00
Hepatic	150.00
Intra abdominal	150.00
Oral (not to include dental or peridental)	25.00
Alveolar	15.00
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Note: Including 4 weeks post-operative care.

TRAUMATIC WOUNDS.

Incised	$ 15.00
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Note: Including all after care.

EYE OPERATIONS.

Hordeolum	$ 5.00
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Foreign body, removal from Cornea, magnet.	20.00
Foreign body, removal conjunctiva dis-section.	15.00
Foreign Body removal for conjunctiva, magnet.	10.00
Plastic operation	50.00
Enucleation	75.00

Note: Including 4 weeks after treatment.

(Continued page 303)

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EDITORIALS

INCREASING OUTPUT BY PREVENTING TUBERCULOSIS.

THE problem of labor turn-over must always be considered in any plan of efficient production. This is a truism, of course, but how many production engineers have considered labor turn-over as involving not only the worker who leaves his job for another but the worker who leaves his job for a hospital or grave?

The bare statements that no less than 700,000 men and women of working age in this country are afflicted by a preventable and curable disease and more than 92,000 of them die annually from this disease, sound startling. This is the case, and tuberculosis is the disease. Yet the 92,000 or more workers who die from tuberculosis are only 70% of the total death toll from this disease. During the past year 132,000 persons of all ages died from tuberculosis in the United States.

In addition to the million active cases of tuberculosis existing here, it is estimated that there is also at least another million persons who have the disease in a latent or quiescent form. The ever-present danger to this latter group is that at any time over-exercise, unwise living or a slight reduction in their powers of resistance may cause the disease to assume an active form.

The economic loss due to tuberculosis has been estimated at no less than a half billion dollars annually. Worst of all, it is a loss which can be avoided, since tuberculosis is preventable and curable. Carefully-worked-out demonstrations have shown that it is possible to control tuberculosis and virtually eliminate it at a per capita expenditure of two dollars per year over a generation in a community.

The National Tuberculosis Association which now has 1200 affiliated organizations in all parts of the country, is carrying on a widespread campaign of education in respect to the nature of tuberculosis and the effective means of combating it. Despite great odds, this is a winning fight, for in the 15 years since the Association began its work the death rate from tuberculosis in the United States has dropped from 200 for every 100,000 population to 120 per 100,000 population. Statisticians estimate that in view of the present population this reduction of the death rate means a clear saving of 75,000 lives a year.

One very important phase of the educational

work of the Association deals with tuberculosis in industry. Here the problem resolves itself into various phases. Prevention of infection is sought by furnishing safeguards against spitting, sneezing and coughing. To build up and maintain the resistance of the individual, constant health education of workers and periodic medical examinations are given. There is required in addition to the medical supervision and health education, the development of the best community activities for recreation.

In regard to the return on such an investment in better conditions, the National Tuberculosis Association has estimated that on an average 2½ years could be added to the average life-time of every individual in the United States if tuberculosis were removed as a cause of death. This would mean a gross saving of at least 25 billion dollars to the industries and people of this country. To remove the disease or reduce it to a negligible minimum would cost probably in the neighborhood of two billion dollars.

The purpose of the National Tuberculosis Association and its allied agencies is to unite communities all over the United States in order to secure the machinery and assistance necessary to prevent and control tuberculosis. The Fourteenth Tuberculosis Christmas Seal Sale which will be held in December of this year provides the revenue for this great health and life-saving movement. Every dollar's worth of Seals purchased means a blow aimed at this disease.

SOME STATISTICS ON OLD AGE.

A STUDY recently completed by the Metropolitan Life Insurance Company of the vital statistics of old age in the United States and in foreign countries, discloses the following:

1. In the United States, in 1910, 43 persons out of every 1,000 living were 65 years of age or older. In 1890 this number was 39. The proportion at the older ages is increasing steadily. In Ireland the number was 100 in every 1,000; in France and Sweden, 84; in Germany, 50, and in England and Wales, 52. The proportion of old people is higher in Ireland than in any other country of Europe.

2. The expectation of life in the United States at the age of 65 for men in 1910 was a little more than 11 years, and for women approximately 12 years. Wherever figures are available, women at this, and practically all other ages, exhibit a higher expectation of life than men. The figures for a few important countries are given in the table below:

Expectation of life (in years) at Age 65 in Certain Countries.

Country	Period	Males	Females
United States*	1909-1911	11.24	11.96
Australia	1901-1910	11.31	12.88
Denmark	1906-1910	12.10	13.00
England and Wales	1910-1912	10.99	12.36
France	1898-1903	10.96	11.97
Germany	1901-1910	10.40	11.09
Netherlands	1901-1910	11.60	12.30
Norway	1901-1910	13.51	14.38
Sweden	1901-1910	12.81	13.69
Switzerland	1901-1910	10.09	10.67

The highest expectation of life is shown for Scandinavian countries. Persons in the United States at the age of 65 have as good a chance for additional years of life as those in most of the other countries of the world.

3. According to the United States Life Tables of 1910, white persons at this age-period live longer than colored persons. The average after-lifetime at age 65 for white men is 11¼ years and for colored men only 9¾ years. White women at this age have an expectation of almost 12 years, whereas colored females have about one year less (10.82).

4. Persons in rural communities live longer than their city cousins. Rural males in the United States have an average expectation of 1.8 years more than city males, and rural females 1.3 years more than females living in urban centers.

5. The chief causes of death at the ages of 65 years and over are organic diseases of the heart, cerebral hemorrhage and apoplexy, Bright's disease, pneumonia, cancer, arterial diseases and tuberculosis (all forms). These seven causes of death are responsible for more than 70 per cent of the total mortality above 65 years of age. Tuberculosis plays an important part in the mortality of old people. The facts are shown for suicide because of the social interest of this cause of death.

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*Original Registration States Only.

The following table gives the selected data on causes of death among persons at the ages of 65 and over in the Registration Area for 1917.

Death Rates per 100,000 *Living, Chief Causes of Death at Ages Sixty-five Years and Over, Registration Area of the United States,* 1917.

Cause of Death	Death Rate per 100,000	Per Cent of all Causes
All causes of death	8308.6	100.0
Organic heart diseases	1706.1	20.5
Cerebral hemorrhage, apoplexy	1057.4	12.7
Bright's disease	1007.8	12.1
Pneumonia—all forms	772.2	9.3
Cancer—all forms	661.7	8.0
Diseases of arteries	433.3	5.2
Tuberculosis—all forms	188.8	2.3
Suicide	34.2	.4

THE MEDICAL SOCIETY.

THE medical society is a mutual organization of and for all the regular medical practitioners in the county and is the connecting link between them and the state and national associations.

Furthermore, its decisions and actions are taken by the lay world as those of the medical profession of the community. Now if the society is to be truly representative and have the influence we desire, it must have the support of the attendance of more than one-third to one-half of the members.

At times such as these when so much legislation vital to our interests is being considered, it is important that legislators whom we may invite to our meetings, see that the profession as a whole is back of the society. They cannot be expected to respect or support any of our wishes when our own members are too indifferent to lend even their presence.

In addition, the society is the meeting place for the exchange of ideas. The practice of medicine being still somewhat of an art rather than an exact science, means that the universities and our books have not told us all, and no man is big enough in mentality or experience to be able to ignore the experience of his fellows. Of no work is it more true than medicine, that he who fails to go ahead falls behind, and one good way of keeping up to date is to hear excellent speakers such as we have had at our meetings and to take part in the general discussion following them.—*Bulletin Delaware County Medical Society.*

AS OTHERS SEE US.

(*Editorials from the Lay Press*)

TO KEEP THE PUBLIC WELL.

The gift by the Rockefeller foundation of $1,785,000 to Harvard University for a school of public health is a recognition both of progress that has been made and of the need of training for men charged with the safeguarding of the health of communities.

We have come a long way in the business of guarding the public against preventable disease. The records of progressive cities grow better and there is competition for the low rate in disease and death. But too often there is a dearth of really competent persons, trained for the peculiar combination of duties that are a health officer's. Too often the capable physician is unfamiliar with the work and the possibilities of sanitary engineering, while the sanitary engineer is likely to lack very necessary medical knowledge.

Now and then nature uncovers a man born to be a guardian of public health who has somehow got into a position where he can exercise his ability. But too much is left to chance. It may be said that even with a supply of men trained in public health work, there is little chance, with our frequent admixture of politics with positions which call for the most expert knowledge, of their being employed. But that is too pessimistic. Nowadays even the politician in office finds it well to employ men who know something about the work. And men with the right kind of training will make their work felt until they are given the necessary recognition and authority.

The gift to Harvard imposes another obligation—to produce leaders in public health who justify their training. If that is done other great schools will find means to set up courses in public health, with limitless prospects in a field that has been barely scratched.—*The Milwaukee Journal.*

MEDICINE AND SUPERSTITION.

Among the agencies for uplifting the Chinese people, other than Japanese bayonets, Shantung treaties, etc., is the little known Pekin Union Medical College, which is just opening another year of its modest but extremely useful career.

Medical science in China is fighting both disease and superstition. The Chinese art of healing, like most other institutions of that ancient nation, has made no progress since it became "standardized" and petrified about the year 2500 before the Christian era in the officially sanctioned system of acupuncture, as laid down in the text book named "Golden Mirror." Disease, according to Chinese theory, is due to a disturbance of the nice balance of vital principles in the human body. Whenever a single vital power becomes too strong for the others, the Chinese doctor endeavors to eliminate the offender by puncturing a hole in the patient's body, the spot selected for this operation varying with the nature of the malady.

But if, from the pinnacle of twentieth century science, we pity the poor Chinaman, let us in all humility case a glance back over our own history of superstition. Not much more than a century separates us from the last burning of witches, when medical science at last disentangled itself from magic and sorcery. Up to Napoleon's time the best field surgeons knew of no way of stopping the flow of blood from a wound except by applying boiling oil, to the untold agony of the victim. Anaesthetics, the greatest boon to suffering humanity (an American invention, by the way) were unknown until the middle of the last century.

Every age has its pet generalization. At present a worldwide hunt is under way for bacilli, and it is taken for granted that no respectable disease can be without specific bacteria. Many have been discovered under the microscope; others, we are told, are "ultra-microscopic," so that we shall never have the pleasure of seeing them in the flesh. Maybe by 1950 the germ theory will be supplanted or supplemented by other discoveries. —*The Milwaukee Sentinel.*

A NEW CROP OF BOOT-LEGGERS.

Red top boots will now be fashionable for physicians as the United State Government recently sowed the seeds for a new crop of boot-leggers in the country and it proposed to open the way to change a decidedly reputable profession into a race of boot-leggers. Legalizing "medicinal beer and wine" is along the same line as a lot of other things which have been done by the United States government to make easier the defeat of constitutional government. The prohibition amendment has not been popular with the enforcement officials of the United States government and this last action in legalizing medicinal beer is one which will reopen the breweries and improve the "wink" which has been so prominent in the violation of the prohibition amendment.

The regulations as promulgated are expected to create a race of "sick" people. The man with a headache will find it possible to secure beer for it just as soon as he can find a doctor with an elastic conscience and a druggist with enough capital to stock the refrigerator. Of course the drinking of the beer will increase the headache and make possible a chance for another prescription and the outcome of it all will be a perpetual motion which will make possible the reopening of the breweries and a nullification of the prohibition law.

Sick rooms will become as common as wine cellars used to be and the California wine maker will work overtime to keep up in making profit with the brewer in Milwaukee and St. Louis.

The new ruling is certain to be a reproach upon the medical profession. Of course there will be a lot of honest physicians in Kenosha and in other cities who will refuse to become boot-leggers. There will be the usual amount of high minded druggists who will refuse to turn their places of business into saloons but the new regulation will come as a real aid to men who want to live and conduct their business just on the frazzled-out edges of law enforcement.—*The Kenosha News.*

THE STAGE DOCTOR.

The stage doctor is usually the pivot on which the action of a play turns from comedy to tragedy. A living presage of death, he may well be called the banshee of the drama.

Experienced playgoers know him on sight, by the huge watch-chain which extends across his waist and which supports at one end a bunch of seals and at the other the timepiece by which he

diagnoses all cases, aided sometimes by a touch of the professional finger on the wrist. His first appearance on the scene is effected somewhat in this fashion—when the rest of the company has assembled:

"Well, are we all here?"

"All but Dr. Harris. I can't imagine what's keeping him."

"Dr. Harris? You surely don't mean —"

"Yes, the great specialist; well-skilled in all diseases of the heart. Here he comes now! What detained you, doctor?"

"Am I very late? (Out comes the watch.) Lord Ravenswood had one of his sudden attacks and I was called in. I fear his lordship is not long for this world."

This brief dialogue informs the experienced playgoer that disaster is at hand and that heart disease will soon claim another victim. As the school of medicine in which Dr. Harris practices recognizes the moral as well as the physical ailment, the playgoer sees death written on the brow of him who should be removed. When the victim falls, which is while occupying a seat in the center of the stage and facing the audience, for the better display of facial expression, the physician springs to his side, feels his pulse, consults his watch and rises with dismal shake of his head, saying: "All is over." If a band happens to be playing, off stage, and bands will play when death is near, the doctor heightens the scene by exclaiming: "Stop the music. Sir Jasper is dead."

It is true that the stage doctor sometimes cures (it is always off the stage that he performs those difficult operations); but his diagnoses are accomplished in full view of the audience. His pulse and watch method never varies, but the results differ. With hand on wrist and watch in hand he will say: "His leg is broken in two places. I must operate at once," or "A touch of his old enemy, the gout."—*Guthrie Livermore, in Vanity Fair.*

WHEN AND WHEN NOT TO BE A DOCTOR.

Is the practice of medicine worth while? This question, the subject of discussion recently before the Pennsylvania Medical Society, at a meeting held at Pittsburgh, was answered as follows by Dr. Spencer M. Free, of Dubois, Pa., as reported in the Pennsylvania Medical Journal:

"If your ideas in life are money, ease, fame, the praise of your fellow men; if you want to have a good time, if you want to be in society, if you want to marry a woman and make her happy instead of uncomfortable and miserable—keep out of medicine. If you want to live the ideal life, if you have that in your soul which fixes your eyes upon the stars, if you have in mind the great Man of Nazareth, than whom no greater has lived in the history of the world, who caught the inspiration of the Golden Rule, who placed service above self, who gave up his job, wandered through all of that country teaching his ideals, who said to his disciples, 'If you would be the greatest of all be servant of all,' if you have these ideals and do not care for the accumulation of money, do not mind missing meals frequently, do not care what people say about you, then the practice of medicine is worth while. If you want a home, you can not have it without some real woman. If you can find such a woman, present the matter fairly and squarely to her, tell her what she will have to endure at your hands, that she must go through life without the silks, satins and furs of other women, that she must do without social life and the many things that are attractive to her. If she is then willing to stand with you and be a helpmate, marry her. There is no man on earth who stands so close to Almighty God as the honest doctor who has the inspiration of souls to heal as well as bodies to heal. Ours is a double office. People lie to everybody but to the doctor and sometimes to him. But we get nearer to the truth, we know more about the skeletons in closets and about the inner history of the man, woman and child in a family. We ought to know; it is the secret of our heart, and that gives us power.

"If, in addition to all the labor, self-sacrifice, self-denial, loss of fame, and everything of that kind, you are still willing to take the abuse that comes to you and yours, then the practice of medicine is worth while. Will you be abused? Undoubtedly. You all know it. You will be misrepresented and lied about and, like the Great Physician of Nazareth, after you have done your best you will be crucified. But it is worth while. Wouldn't you rather today be the Man of Nazareth than all the Alexanders, Caesars and Napoleons? In the history of the world, where are they now compared to Jesus of Nazareth, the Great Physician, who went about doing good without a home

—indeed, without a place to lay his head and without a meal arranged for in advance? If these are your ideals, to serve constantly to the best of your ability, to sacrifice everything—sometimes even your health and life—if you have before you the opportunity to be of some good in this world and to make the world a little better, a little more fit for others, then what matters everything else?"—*The Literary Digest.*

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OBESITY.

BY HUGH P. GREELEY, M. D.,

MADISON.

CASE I. Mrs. A. Weight 375 pounds. Age 42. Height 5 ft. 10 in. Heredity—all her family are very large and very fat. Has been gradually putting on weight after each pregnancy until it has become a burden to her. Eating habits normal as to kind of food but an excessive quantity is eaten. Cta. is scant. By careful dieting she has reduced 90 pounds in 6 months.

CASE II. Mrs. B. Weight 235 pounds. Age 36. Height 5 ft. 11 in. Heredity—family all large but not obese. Gradual onset, with sterility an added factor. Eating habits—patient says she has a "natural dislike" of nearly all fruits and vegetables. In the first month of treatment she lost 20 pounds.

CASE III. Mrs. C. Weight 235 pounds. Age 36. Height 5 ft. 8 in. Heredity—family very stout on mother's side. Always fat since childhood. Eating habits—loves to eat—always nibbling. Faulty as to kind of food and quantity. Has put on 18 pounds in last 3 months and wants to pay someone to make her diet. Cta. scant and delayed.

DISCUSSION.

All three cases represent some features that are common to most cases of obesity. Heredity is a factor generally in over 75 per cent of the cases. The worst increase in weight comes in women just before and during the menopause. When it begins several years before it generally affects menstruation and often sterility. Fat women are in other ways rendered unfit for child-bearing since they can seldom nurse their infants.

Case I represents a fairly common type of married woman who, about the time of the menopause, gets very stout. This woman's tastes were normal and her tastes were simple and sensible. She was not in any sense of the word a food drunkard. She realized her condition and her determination to reduce carried her through much more rapidly than is usually wise. She practically lived on a protein diet for six months, with a large amount of bulky vegetables and fruit very poor in nourishment. Her diet was full of mineral salts—water soluble vitamines but rather poor in fat soluble vitamines. The adequate protein diet gave her her sense of well being so that she never suffered from hunger. Her blood pressure has reduced 20 points and probably will continue to fall.

Case II represents such a common condition and one so important in its bearing on the bringing up of children that it needs comment. This woman told me she had a "natural dislike" for vegetables and fruit. Other expressions for the same thing are—at such an age my boy turned against milk and he has never taken it since. Now with the single exception of foods against which children have an idiosyncrasy, such as eggs and milk and certain proteins, there is no such thing as a natural dislike. The dislike is cultivated either by imitation of one or the other parent or is a finicky notion which the parents allow to become a fixed dislike, if you will, but not a natural dislike. Parents should insist from the beginning that children eat all plain wholesome foods. It is a crime to the child to allow him to grow up restricting his own diet, as he will often to a meat, potato and bread diet.

Case III represents the real food drunkard—one who lives to eat and can no more pass a dish of ice cream in summer than fly—a person who seldom if ever, makes a success of any diet cure, the person who begs for thyroid extract to make her thin —or some medicine. She has not the will power or the real desire to undergo any discomfort to attain a Junoesque figure. She will diet if at all by fits and starts and go from one doctor to another, always trying to put the responsibility for success or failure wholly on the doctor.

Treatment depends entirely upon a diet of under-nutrition. These people have a normal metabolism. Their food requirements are the same per kilogram as those of a thin person.

Hence if their diet is inadequate they will of necessity burn their own fat and get thinner.

Of the many past cures for obesity many were unnecessarily strict and limited; and some were dangerous. A pure milk diet is an under-nutrition diet but contains a rather high protein factor if taken in adequate quantities and is too limited for comfort.

A meat diet such as was advocated by some is dangerous because of possible injury to the kidneys.

It seems wise to put these people on carefully restricted diets as to quantity and allow a large variety of foods—such as vegetables and fresh fruits, restricting protein to about 1½ grams per kilo, and reducing sugar and fat in the diet to a minimum, also starches such as bread, potato, cereals and macaroni, to a very limited amount.

On an adequate protein ration and a diet with plenty of roughage for bulk, reduction cures can be carried through with the least amount of discomfort. Slow reduction is desirable so as to form new habits of eating. Thyroid extract has no place in the treatment of obesity unless it be for the first week or so, just to get quick results and so encourage the patient.

CLINIC OF HENRY B. HITZ, M. D., MILWAUKEE.

Case No. 1. Foreign body in right bronchus of a child of 6 years. Removed by Bronchoscopy.

This child was referred to Dr. Gordon for some difficulty of respirations, which had existed for three weeks.

Physical examination revealed a whistling sound heard loudest over the right bronchus.

There was no dulness on percussion and no perceptible rales. Suspecting a foreign body, X-ray was made and revealed a small "Mechano" screw-bolt, with the nut screwed half way up. It appeared to be directly opposite the 5th rib. A duplicate bolt was obtained from the parents, and proved to be of steel, brass-coated and magnetic. Effort was first made to dislodge that in the bronchus by tilting the child's head and body downward, and using the Giant Magnet in the direction of gravity. At each application of the Magnet the patient experienced a sharp pull, but no progress resulted.

A bronchoscopic tube was then inserted under ether anaesthesia, and in the neighborhood of the 2nd bifurcation of the right bronchus the bolt was observed, head downward and of too large size to be drawn into the tube. Its end was securely grasped by a pair of forceps, carefully dislodged and drawn tightly against the end of the tube and the entire apparatus slowly withdrawn. The bronchoscopy occupied about five minutes exclusive of anaesthetic, and the child made a complete recovery without temperature reaction or other physical discomfort. There was absolutely no traumatism evident.

The bolt when removed was badly rusted and had completely lost its brass guilding.

Case No. 2. A child of 14 months was brought into the Children's hospital with pronounced laryngeal stenosis; badly cyanotic and in a febrile state. Examination of the nose, upper and lower throat failed to reveal any reason for the condition of laryngeal occlusion. The larynx above the cords was non-inflammatory and normal, but apparently no air passage seemed to exist below. Externally the neck was somewhat swollen and tense, on both sides of the larynx and just at the Thyroid Isthmus in the exact median line could be felt a tense circumscribed induration, apparently glandular in character and about the size of a hickory nut in the husk.

As it was evident something had to be done at once, instruments for tracheotomy were ordered prepared, but before doing anything a hypodermic needle was thrust in, and an effort made to determine the presence of fluid. Nothing came through the needle which was withdrawn, but through the needle perforation a thick pus escaped. A small incision was then made and widened with forceps, allowing the evacuation of fully a tea cup full of fetid thick pus and a free tube drain inserted, cultures from which showed streptococcus.

The respiration was immediately improved, and continued to do so until complete recovery within four days.

We were at a loss for an explanation of this peculiar site for an abscess to point, and as to the source of the invasion. There are no glands under the deep fascia in the median line and the extensive purulent invasion completely occluded the caliber of the trachea. We were finally forced to the conclusion that it was probably an infected Thyro-glossal duct, occupying however, a lower position than is usual in such cases.

CIRCUMSCRIBED ECTASIA OF THE CORNEA.

BY G. N. BRAZEAU, M. D., F. A. C. S.,
MILWAUKEE.

It is not unusual for thinning of the cornea, from either traumatic or infectious inflammatory causes, to end in a keratocele, but in cases like this one the cause remains unknown. In this latter variety the ectasia is more or less symmetrically developed in both eyes tho its bilaterality could not be determined here as the other eye had been removed many years ago. Circumscribed ectasia is an appendage of old age, rarely occurring before sixty; this patient was seventy-two years. It is of very slow development, transparent, and usually accompanied by very high astigmatism, seven to

thirteen diopters, and with myopia which accounts for the poor vision following it.

This patient has always done very fine needlework with the aid of a minus four diopter lens. She consulted me because her vision was reduced to counting the fingers at three feet. Besides noting the ectasia, I found an almost complete opacification of the lens, the anterior chamber very deep, the iris funnel shaped, the tension and the light perception normal. The ectasia occupies the upper margin of the cornea for about three millimeters and is opaque, while the remainder of the cornea is clear. The opacity is concentric with the limbus, from which it is separated by a narrow strip of transparent cornea. Fuch believes that ectasia is a degenerative process intimately related to an exaggerated development of the arcus senilis; while Terrien believes in the theory of a dystrophy; and Lauber believes in an inflammatory origin. I advised removing the lens, since her previous vision had been so good. The poor vision that usually accompanies ectasia of the cornea, constituting its principal symptom, though present now, is not due to the corneal astigmatism but rather to the defective condition of the lens. Had the poor vision been due to any great amount of astigmatism, the removal would again complicate the situation by adding to the already existing astigmatism, that incidental to a corneal section.

The usual treatment of ectasia of the cornea consists in correcting all the errors of refraction as well as possible. At the best, the vision remains low.

REPORT OF A CASE OF CARDIO-SPASM WITH ENORMOUS DILATATION OF THE ESOPHAGUS.*

BY THOMAS J. SNODGRASS, M. D.,

JANESVILLE.

The first cases of socalled idiopathic dilatation of the esophagus were collected by Von Ziemen and Zenker in 1878. In 1904, Mkuilitz reported one hundred cases collected from the literature. Since that time Sippi, Lerche, and Erdman in this country have reported a number of cases, and in 1908, H. S. Plummer of Rochester wrote a very excellent paper on the subject and reported forty cases of Cardio-spasm which he had treated up to that date. Many more cases could be reported at this time, but the diagnostic methods and the treatment has not changed materially since that time. The interest in the subject lies in the fact that cardio-spasm is a condition which the average practitioner seldom sees.

The following is a brief summary of Plummer's work on the subject. The disease has been attributed first, to cardio-spasm; second, to atoni of the esophagus; third, to simultaneous presence of cardio-spasm and paralysis of the vagus; fourth, to congenital disposition; fifth, to primary esophigitis; and sixth, to kinking of the hiatus esophagi. In all probability the atoni seldom occurs. Cardio-spasm may be associated with gross lesions as ulcer or cancer.

The cardia is normally closed and the food is pushed through by the peristalsis of the esophagus. After dilatation takes place the bolus of food is carried forward in the usual manner as far as the upper end of the dilatation. At this point the peristaltic contraction ring ceases to exert any direct force on the bolus but sweeps around it. The food is then propelled by gravity and increased pressure. In the development of cardio-spasm three stages are recognized. In the first stage the peristaltic contraction is sufficient to force the food through the spastic cardia.

This stage is characterized by discomfort, pain, and a choking sensation. Second, the peristaltic force is insufficient and the food is immediately regurgitated. This may be due to the increased cardio-spasm or decreased muscular power of the esophagus. At first the spasm is periodic, later continuous. At first, there is a hypertrophy of the muscles of the esophagus and later a stretching. Third, once the esophagus begins to give way the dilatation is rapid. This stage is characterized by retention of food and it's regurgitation at irregular intervals after injestion. The symptom complex is, therefore, first, cardio-spasm without food regurgitation; second, cardio-spasm with immediate food regurgitation; and third, cardio-spasm with dilated esophagus, retention, and irregular regurgitation. After dilatation has taken place the sac never completely empties and the amount of retention may vary from two to sixteen ounces and can be withdrawn twenty-four hours after fasting.

Some of the points in diagnosis are: food regurgitation from the oesophagus and not the

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*Read before the Tri-State District Medical Society, Waterloo, Iowa, Oct. 5, 1920.

stomach; the existence and character of the obstruction at the cardia; the presence or absence of oesophageal dilatation, its shape and size; radiographing of the bismuth in the dilating oesophagus; determination of the size of the dilatation by means of a rubber balloon distended within the oesophagus; and the oesophaguscopic examination.

One of the suggestive symptoms is failure to pass the stomach tube although an olive passes readily into the cardia. Immediate regurgitation of undigested food upon passing the stomach tube is suggestive of dilatation of the oesophagus. One cannot always make a diagnosis by the use of olives because if an olive strikes the cardia at its center it passes very readily through the cardia without offering much resistance. This will distinguish it from an organic stricture.

The old style of treatment such as the use of fluids, non-irritating diet, effervescent drinks, bromides, frequent passage of sounds is very ineffective. A few cases have been operated upon and the cardia dilated through the gastrostomy wound. This is effective but not necessary. The development of the apparatus for stretching the cardiospasm by means of hydro-static pressure in a strong, silk bag has made the more radical treatment unnecessary. With such an apparatus it is possible to stretch the cardia enough to paralize the sphincter without tearing the opening itself. If the pressure of 500 mm. will not accomplish this, pain is disregarded as a guide and dilatation is carried out, gradually increasing the size. In the cases treated in this way the most gratifying are reported.

The case which I wish to report is that of T. P. W., age 66, married farmer; present weight 142; weight several years ago, 172; family history negative. He gave a history of having had trouble in swallowing since he was fourteen years of age. He said that food would stay in his oesophagus several hours and then he would have to spit it out. He gave no history of any trouble before the age of fourteen, except that he was subject to croup. He was taken to one doctor who recommended smoking and this did him some good. A year later he was taken to another doctor who recommended an operation, but his people were poor, and did not favor such a procedure. This continued without treatment for forty years. Seven years ago, he had the flu, and from that time he grew steadily worse in regard to his swallowing. It required enormous pressure to force food into the stomach. He found that he could eat practically a whole meal before swallowing it.

It would then be necessary for him to leave the table, throw his arms back, grasp something firmly, take a drink of water, throw his head back and thus, with enormous pressure, force the food into his stomach. It would shoot in with a very audible whistling sound.

The oesophagus, however, was never entirely emptied and every morning he would throw out a large amount of food that had been taken the night before. The patient's appetite was good; he belched practically not at all, but was continually troubled with a large amount of gas which passed out through the bowel. He had no particular distress after eating; he never vomited, but simply regurgitated the food out of the oesophagus, which he was unable to swallow. His bowels were regular; he had a slight brassy cough; no pain; was somewhat nervous and ill-nourished. His general physical condition was fair for a man of his age.

An X-ray examination was made. Upon giving him a bismuth meal it was found that no food passed into his stomach; that the oesophagus was enormously dilated, was narrowed down to a small stricture in the region of the cardia about one inch and a half long and one-eighth of an inch wide. On the first examination we were unable to fill the stomach, but upon attempting to pass the stomach tube, a large amount of undigested food was regurgitated from the oesophagus. Considerably over a quart of residue was thrown out at this attempt. We were also unable to pass the olivary bougie as it seemed to stick in the sac.

The patient was given a spool of silk thread with two bebee shot attached and instructed to swallow the shot and keep the spool of silk in his pocket. After several days the thread had passed down into the intestine far enough so that it could not be pulled back. With perforated olive bougies we followed the silk thread down through the stricture and by increasing the size of the bougies, gradually stretched the stricture. We found, however, that the stricture would close down immediately after stretching and the patient was given anti-spasmodics for a few days and this treatment continued. Later it was possible to pass the stomach tube down along the thread and into the stomach. After this had been accomplished he was fed through the

stomach tube a large amount of milk and cream and given only very soft food and liquids. By this means his general physical condition was improved very greatly. Later we were able to pass a rubber bag with a silk covering into the narrowing. With ordinary bulb pressure we stretched the stricture enough to give him considerable relief. These stretchings were continued and at the same time, the oesophagus was kept empty and food was introduced into the stomach by means of the stomach tube. The patient's condition improved rapidly and the oesophagus regained its tone somewhat. The analysis of the stomach contents showed a considerably lowered acidity. He was given a little dilute hydro-chloric acid to assist in the digestion of his food.

An X-ray examination several months after treatment showed very normal function of the gastro-intestinal tract. The six hour breakfast had advanced to the caecum; there was no residue in the oesophagus or the stomach. Examination under the fluroscope showed still some delay in the food passing from the oesophagus into the stomach. He was able to swallow food with very little difficulty, his weight increased, he never regurgitated food, he belched freely, and was thereby relieved of the distressing bowel symptoms.

The bulb pressure apparatus is one that can be made by anybody and will give fairly good results from the start if the dilatation is repeated often. However, by means of the hydro-static dilator which we later obtained and used on this case, it was possible to accomplish more with one or two dilatations than we accomplished with many treatments of the milder type. In the first treatment with the hydro-static apparatus the pressure is ordinarily run up to 3 or 4 on the gauge. In this case pressure up to 12 was used. With the second treatment an attempt is made to increase this pressure enough to accomplish the desired results. Even with this apparatus it is sometimes necessary to repeat these dilatations a good many times, and if a recurrence occurs within a year or two the spasm can usually be overcome with one or two treatments.

The second case which I wish to report is a case of a young woman, age 23, who was referred to me by a nose and throat man whom she had consulted with the idea that she had throat trouble. This young woman gave a history of having had difficulty in swallowing for the past two years. She first noticed that food would stick in her throat at times and she could often feel the food as it passed down through the oesophagus. A year ago she became much worse. She consulted several physicians but obtained no relief. Since that time she has been regurgitating small portions of food and liquid immediately after swallowing.

When first examined her trouble had become so severe that she was suffering from a very distressing thirst which she was unable to relieve because of her inability to swallow water. She was in good physical condition and showed no evidence of malnutrition. Under the fluroscope the barium meal seemed to lag in the oesophagus. Liquids went down fairly easily. Twenty minutes after giving her a motor meal, the oesophagus was still filled with barium and slightly dilated just above the cardia. The stomach tube failed to pass and upon withdrawing it from the oesophagus, some of the meal was regurgitated. The olivary bougies passed with only slight resistance at the cardia, which slight resistance was about 14 centimeters down from the teeth. The hydro-static dilating bag was passed but upon filling the bag it was found difficult to hold the dilator in proper position as the inflation seemed to press the bag into the stomach. It has been found that in these early cases where the oesophagus is not much dilated, it is necessary to hold the dilating instrument very firmly against the teeth and not allow it to slip down if one is to accomplish the desired result. Three stretchings were used in the case of the woman, the pressure was put up to 12 in the first, 15 in the second, and 20 in the third, as is shown on the pressure gauge. Since the first stretching she has had no difficulty in swallowing and aside from the little discomfort which she had about 48 hours after the treatment, she has had complete relief from the symptoms.

In conclusion I will say that if one is not able to obtain a hydro-static dilator, the bulb pressure apparatus can be made with just a blood pressure bulb, a stomach tube, a galvanized telephone wire. and an olivary bougie. The olive is soldered on to the end of the wire. The wire is placed in the lumen of the stomach tube to act as a stillet, and over the olive and attached to the lower end of the stomach tube, is placed the rubber balloon and on the outside of this there is a silk bag or an animal membrane to keep it in shape. This is then pushed into the contracted cardia and as much pressure as

the patient can bear is used, repeating this as often as necessary to accomplish results.

PREVENTIVE MEDICINE

Edited by
W. D. STOVALL, Chairman
Section on Preventive Medicine, State Medical Society of Wisconsin

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ORAL HYGIENE AS A PUBLIC HEALTH PROBLEM.

BY V. A. GUDEX, M. D., D. D. S.,

DEPUTY STATE HEALTH OFFICER,

EAU CLAIRE, WISCONSIN.

Recent epidemiological studies of communicable disease transmission have served to focus increased attention upon oral hygiene as an important phase of preventive medicine. Especially has this been apparent since the droplet theory of infection has been advanced in certain diseases, notably influenza. While not susceptible of exact proof, it is probable that the nose, mouth and throat are largely responsible for the dissemination of many communicable affections, especially of the eruptive type.

There are numerous systemic ailments in which the disturbances originate in the mouth. On the other hand there are few systemic disorders in which some signs and symptoms, often pathognomonic, are absent from the mouth. The presence of Koplik's spots in measles, the strawberry tongue and characteristic angina in scarlet fever, the membrane in diphtheria and the appearance of the tongue and mucous membrane in hepatic disorders, may be cited as examples of oral, buccal, nasal and larnyngeal danger signs. Consequently a physical examination can not be considered complete or satisfactory when the mouth and adjoining passages are overlooked.

Parotitis may be cited as an example of infection in which the mouth undoubtedly plays a large part. While the cause of mumps is rather indefinite it is strongly probable that the virus is transmitted from the sick to the well through the saliva. Attempts have also been made to inoculate the perspiration as well as the genito-urinary excretions and secretions as causative agents of mumps. Infected saliva, however, is probably the medium through which the virus is transferred.

The rapidity with which mumps spread through some of the United States cantonments during the war was an impressive commentary upon the progress made by a saliva-borne disease. Despite the most painstaking sanitary measures and the greatest possible vigilance on the part of the medical officers the case incidence was often abnormally high. Similar experiences may be expected in other saliva-borne communicable diseases, the rapidity with which the infection is spread depending largely upon the virulence of the agent and the facilities for its transmission.

The proximity of mouth, nares, tonsils and pharynx enhance the opportunities for the transfer of infection from one of these parts to another. Therefore, it is futile to expect the best results to follow the removal of tonsils or adenoids while infective foci remain in contiguous parts. Thus there may apparently be attacks of tonsilitis after the tonsils have been removed. In some instances tonsillectomy has resulted fatally through failure to remove foci of infection in other parts of the naso-buccal cavities.

Tooth extraction, too often considered a trivial operation both from the standpoint of technique and professional remuneration, should be placed upon a higher plane. Even 40 years ago deaths from septicemia and cerebrospinal meningitis following tooth extraction were recorded. Now there is good reason for believing that the sockets of the second and third lower molars provide the channels through which meningococci, streptococci and staphylococci gain access to the general system.

In order better to appreciate the role of the nose, throat and mouth in producing disease it may be recalled that the causative agent of cerebrospinal meningitis is often found in these parts. In chickenpox the lesions usually appear in the mucous membrane before they are seen in the skin. However, they are often overlooked in the mouth because of the readiness with which they rupture and subsequently disappear. Infection is also present in the mouth in cases of measles and mumps and sometimes in glanders. In German measles it is believed that the infection is primarily carried in the mouth, while in diphtheria, the nose, throat and pharynx are frequently involved.

The sputum of those ill with pneumonia plague usually contains an abundance of organisms, many

of which are left in the mouth after expectoration. There is considerable reason for believing too, that the virus of infantile paralysis is often lodged in the nose. Other similar examples are the infected saliva of persons ill with rabies, the presence in the mouth of the causative agent or virus of those ill with lobar pneumonia, smallpox and scarlet fever. In pulmonary tuberculosis the coughed-up particles cause the dissemination of the tubercle bacilli in the mouth. In whooping cough, commonly regarded as a trivial affection, but which exacted the startling toll of 281 lives in Wisconsin in 1920, the Bordet-Gengou bacillus is often found in the mouth. Influenza, responsible for the greatest catastrophe of modern times, is probably transmitted through infected droplets sprayed from the mouth, nose and throat of patients, convalescents and carriers.

There is already considerable evidence, especially as regards measles, indicating that the exanthemata are most highly communicable in the pre-eruptive stages. It is at this time that the patient mingles freely with the well, although the precusory symptoms such as cough or coryza may already be apparent. Therefore, there is need for educating the public to regard with grave suspicion persons suffering with apparently simple coryzas, febrile reactions or other premonitory symptoms.

That droplets are actually given off in the breath may be demonstrated on a frosty morning. Observation shows that the breath of ordinary exhalation travels approximately four feet. During coughing, whistling or other violent expulsions, droplets may be propelled ten feet. With this knowledge the physician, nurse or attendant is in better position to guard against droplet infection. However, patients with known infections should not be permitted to cough or talk unless the head is averted or otherwise guarded.

The knowledge that infection may be spread by droplet spraying patients and contact can do a great deal in preventing the spread of disease. If reasonable precautions are observed much unnecessary suffering would be avoided. Concurrent disinfection of discharges, even in the so-called milder infections will aid greatly in lessening the dissemination of communicable affections. In this connection the necessity for prompt sterilization of dishes, utensils, cloths and papers coming in contact with the nose and mouth should not be overlooked.

The following substances in the normal and pathological mouth serve as nutrient media for microorganism growth:

1. Saliva.
2. Mucous, especially of the buccal membrane.
3. Dead epithelium.
4. Softened or decalcified dental tissue.
5. Exposed tooth pulps.
6. Exudates from diseased gingiva and gums.
7. Salivary deposits from the teeth.
8. Particles of food.
9. Particles brought up by coughing.
10. Blood and exudates from injuries.

Whenever the bactericidal function of the oral fluid is lost or the normal resistence of the tissues broken down, conditions are present for making the mouth an incubator.

There are several ways in which infection is carried from the mouth into the general system. An apical dental abscess affords a direct portal into the circulation. A diseased or otherwise injured mucous membrane offers similar facilities. In some instances, too, the infectious material may find its way into the digestive tract, producing disorders of that region. Moreover, the infection may be transferred by absorption from the digestive apparatus to the general system.

In a severe case of pyorrhea several drams of pus may be given off and a considerable portion absorbed daily. Unfortunately this disease is slow, insidious and accompanied by little discomfort until permanent damage has been inflicted. Were every case of pyorrhea accompanied by pain, prompt action would be taken to alleviate the condition. Consequently there would be fewer of the remote glandular and articular involvements, which are only too frequent at the present time.

Any lingering doubt as to the ability of an oral infection to transfer its activities to other parts of the general system can be dispelled through the use of hydrogogue cathartics in severe pyorrhea or in empyema of the maxillary sinus. Lest anyone be tempted to perform such a dangerous experiment, it may be stated that the result is a rapid production of metastatic abscesses in the fingers, toes, and perhaps in the internal organs.

It is not unusual for the contents of a putrifying pulp to be forced into the tissues beyond the apex of the tooth. The piston-like force of masti-

cation will sometimes transmit sufficient force through food lodged in a cavity to push the putrid material through the apex. Even when there is no opening into the dead pulp, gases generated by putrifactive processes may reach the tissues beyond the apex, incidentally carrying onward infectious material.

Occasionally the roots of certain teeth project into the maxillary sinus, being covered with the mucous membrane, thus leaving a relatively unprotected body projecting into the antrum. Obviously this condition may exist for years before discovery.

Mouth infections begin with the birth of the child, making it just as important to cleanse the oral cavity as the eyes of the new-borne. Needless social habits, such as kissing infants on the mouth and face are frequently responsible for oral infections. The opportunities for self infection in infants is likewise considerable.

The testing of food in mother's mouths prior to feeding the child is one of the reprehensible practices calling for condemnation and education. Coughing, sneezing or breathing directly into another's face should invariably be considered dangerous. Children should be taught to avoid such practices.

The tooth brush and tooth pick, when carelessly employed, are a menace to health. The presence of blood upon either implement is an indication of damage inflicted upon the gums. Occasionally the damage is severe. The toothpick too often destroys the gums in the interspaces of the teeth, providing undesirable lodging places for food particles.

Tooth brushes were never intended to do more than cleanse mechanically the free surfaces of the teeth. To say that "a clean tooth never decays" is to display ignorance of the effects of proper nutritition, extending even to the mother's physical well-being prior to a child's birth. The gums and buccal mucous membrane may easily be cleaned with absorbent cotton and a non-irritating antiseptic solution. Tart tooth powder and irritating mouth washes are useless in a normal mouth. Even in a diseased oral cavity their use is limited. While the mucous membrane of the mouth will withstand considerable abuse it must be expected that continued irritation will lead to pathological conditions.

Defective teeth and unclean mouths are closely related to malnutrition. Therefore, it is greatly to be regretted that children's mouths are often neglected until pain or discomfort directs attention to the seat of the disorder. The popular impression that temporary teeth are not worth saving has permanently impaired the health of many. The sixth-year molar is frequently mistaken for a temporary tooth and neglected until preservation is difficult or impossible.

The filling of temporary teeth is a comparatively simple procedure if the pulp is not involved, because less discomfort is suffered by the patients than when permanent teeth are involved. The maintenance of the temporary teeth in good condition until they are replaced may be considered an important public health matter.

One of the great present day needs is ample provision for dental supervision of those who ordinarily cannot pay for such service or have not been educated to the necessity for such conservation measures. The formation on a large scale of organizations which would provide adequate dental service for the indigent and uneducated would be a boon to present and future generations. There will never be substitutes for the conscientious physician and dentist.

In the routine examination of school children the percentage of those having sound teeth is invariably small. When it is recalled that not more than 15 per cent of the general populace is familiar with the principles of elementary hygiene, it is not to be wondered that the younger generation neglects this important public health adjunct.

There are approximately 49,000 dentists in the United States. The working time of these practitioners is almost entirely occupied in relieving pain and repairing damage inflicted by dental caries. The necessity for correcting these obvious defects obviously precludes wholesale attention to oral hygiene, especially routine cleaning of the teeth. There has risen, therefore, the need for supplementing the present dental profession with a corps of prophylactic workers. Several universities have already inaugurated courses for the training of dental hygienists. Women appear to be especially suited to work of this character.

The provision for dental hygienists, however, is not sufficient fully to meet the demands. Research laboratories, equipped for experimental and scientific investigations of oral hygiene problems, are much needed in order that prophylactic and cura-

tive measures may be based upon rational principles. While valuable work along these lines has already been performed there is still need for the entrance of qualified workers into the field.

Reference to research workers in the field of dental hygiene would be incomplete without special mention of the investigations of mouth infections by Dr. Willoughby B. Miller. After establishing an enviable record for dental research in Germany, Dr. Miller returned to America to become dean of the dental school at Ann Arbor.

The excellent work performed by this illustrious American should serve as an incentive for others to enter a promising field. A greater interest and appreciation of the value of dental hygiene is needed not only on the part of the general public but also by physicians and dentists. When this intelligent interest is manifested and prophylactic measures are consistently applied it will not be unreasonable to expect a notable reduction in many affections, particularly those of a communicable character.

TABLES OF FEES AUTHORIZED AS A GUIDE FOR SURGICAL AND OTHER PROFESSIONAL SERVICES. BUREAU OF WAR RISK INSURANCE.

(Continued from page 288)

PART.	FEE.
OPERATIONS.	
Appendectomy	$100.00
Gastro-enterostomy	175.00
Gastrectomy (parted)	225.00
Cholecystectomy	150.00
Cholecystotomy	150.00
Intestinal Anastomosis	150.00
Intestinal re-section and anastomosis	200.00
Paracentisis abdominis	35.00
Super—pubic cystetomy	125.00
Tumor abdominal	125.00
Hernia, Ing.	100.00
Nephrerrhaphy	175.00
Nephrectomy	150.00
Nephrotomy	150.00
General Peritonitis with drainage	150.00
Splenectomy	150.00
Stone in the ureter	175.00
Salpingectomy	150.00
Operation for prolapse uterus include perineal repairs	150.00
Operation for uterine displacement, intra abdominal	100.00
Ovariotomy	125.00
Amputation cervix	75.00
External Urethrotomy	100.00
Suture of nerves	150.00
Venesection	20.00
Thyroidectomy	150.00
Prostatectomy	150.00
Orchidectomy	75.00
Curettement Uterine	50.00
Cystoscopy, including catheterizing of ureters	40.00
Excision of shoulder joint	150.00
Excision of elbow joint	150.00
Excision of wrist joint	125.00
Excision of hip joint	200.00
Excision of knee joint	175.00
Excision of ankle joint	125.00
Hysterectomy	150.00
Fistula-in-ano	75.00
Prolapsus, ani, intra abdominal fixation	125.00
Haemorrhoids	60.00
Repair of Perineum	80.00
Re-section rib (see abscess Thoracic)	40.00
Varicocele	50.00
Varicose veins, one leg	75.00
Varicose veins, both legs	100.00
Bone graft (long bones)	150.00
Removal of sequestra	50.00
Other osteoplastic operations, debridement, etc.	120.00
Litholapaxy	70.00

Note: Including 4 weeks post-operative treatment.

EAR OPERATIONS.

Paracentesis	$ 25.00
Ossiculectomy	75.00
Acute mastoid	125.00
Radical mastoid	160.00
Removal of polypus	25.00
Lateral sinus, drainage	150.00
Brain abscess drainage	175.00
Labyrinthial	150.00

Note: Including 4 weeks after treatment.

NASAL OPERATIONS.

Turbinectomy	$ 25.00
Intra-nasal drainage of antrum	60.00
Intra-nasal drainage of fontal sinus	75.00
Internal sphenoid sinus	75.00
Sub-mucous resection of septum	50.00
Radical othmoid	75.00
Exter. radical frontal	125.00
Exter. radical antrum	125.00
Operation for polypus	30.00
Operation for laryngectomy	175.00
Operation for laryngotomy	80.00
Operation for hair-lip	100.00
Operation for cleft palate	150.00
Removal of laryngeal growth	100.00

Note: Including 4 weeks after treatment.

ANAESTHETICS.

General anaesthetic, by doctor	$ 10.00
General anaesthetic, by technician	5.00

(Continued page 309.)

ENDOCRINOLOGY.

The mere fact that hundreds of physicians and thousands of patients have testified to having profited by the use of this or that endocrine preparation, R. G. Hoskins, Columbus, Ohio (*Journal A. M. A.*, Nov. 5, 1921) says, carries no conviction of its actual value to one who reflects that the pharmacopeias are filled with useless medicaments of which the same can be said. Reports of cures are convincing only when accompanied by adequate evidence that suggestion and other accessory therapeutic measures, as well as mere coincidence, have been ruled out as the determining factors. So long as practitioners fail to realize the essential requirements of scientific evidence and to educate their patients along this line, not only pseudo-endocrinology but also a multitude of other pseudoscientific cults will continue to flourish. The outstanding fact is that endocrine physiology is largely in a state of uncertainty, where as the facile applied endocrinology with which we are so unfortunately familiar assumes a large body of substantiated fact. Deductive reasoning, which is the mainstay of a considerable class of self-styled practical endocrinologists, can be productive only when the premises are sound. However probable the existence of numerous circulating hormones, proof of their existence is almost completely lacking. The existence of hormonic antagonism remains yet to be proved, however fascinating it is to theorize about. A fantastic theory that has had some currency is that the body cells have a capacity to select from a pluriglandular mixture any hormones they happen to need and to discard the rest. All the evidence is to the contrary. Both clinically and experimentally it is sufficiently plain that the law of mass action has not yet been repealed. To deduce from the unfortunate existing situation, however, the conclusion, which certain shallow observers seem to have drawn, that the field of endocrinology itself is merely a mirage, is quite as crass a mistake as to accept as substance every flattering prospect the eye discerns. Endocrinology is one of the most difficult fields of biology. The problems presented are fundamental and quite as fascinating as can be found in any field. There is no easy road in endocrinology, either to discovery or to knowledge already gleaned. There are many problems demanding solution, which require, not genius, but merely accuracy and patience together with recognition of the ordinary critera of evidence in any field. What is needed is more work, carefully planned and carried out, less shallow theorizing on the part of those dabbling with the problems and the consistent but discriminating support of the medical profession.

ECONOMIC LOSS.

One hundred dollars per year does not seem a very high valuation for an average human life—in fact, many of us might agree that we are worth rather more than that to our country. Yet, with only this amount as a basis, it has been estimated that the economic loss to the United States through one disease alone is $25,000,000,000, and possibly double that sum. A recent study made by the National Tuberculosis Association and the Metropolitan Life Insurance Company, indicates that an average of two and a half years could be added to every individual's life if tuberculosis were eliminated.

There are 1,000,000 cases of consumption in this country at the present time and approximately another 1,000,000 persons have the disease in a quiescent stage. Since the National Tuberculosis Association began its campaign fifteen years ago, the death rate from consumption has declined from over 200 per 100,000 population to approximately 120, thereby saving the country about 75,000 lives a year. If the terrific economic loss from the disease were confined to one occupation the enormous waste of human life caused by a preventable and curable disease would stagger the civilized world. But tuberculosis takes its toll from all classes of society and its victims are scattered through every trade and profession, thus making it difficult for us to realize the price we pay each year in money and needless pain and suffering.

In order to continue its campaign against the White Plague particularly through the education of the public in regard to the preventability of the disease, the National Tuberculosis Association and its 1,200 affiliated agencies are conducting the Fourteenth Annual Sale of Tuberculosis Christmas Seals in December. It has been estimated that the necessary health machinery to control tuberculosis would cost approximately $2.00 per person in any American community, or a total for the entire population of the United States of $7,000,000,000 spread over a generation. This would mean a net saving to the United States of producing power valued at approximately $23,000,000,000 within a generation if tuberculosis could be eliminated.

MELLON ISSUES BEER REGULATIONS.

The postponed regulations for the manufacture of beer, and its sale by druggists on physicians' prescriptions, have been authorized by the Secretary of the Treasury. The original Volstead act prohibited the manufacture and sale of "intoxicating beverages." The question whether the manufacture and sale of whiskey, beer and wine for medicinal purposes was contrary to the law was passed on by Hon. A. M. Palmer, Attorney-General of the Wilson administration, who held that it was not the purpose of Congress to prohibit the use of liquor for nonbeverage purposes, and that the Commissioner of Internal Revenue is authorized, under the Volstead act, to issue permits for the manufacture and sale of liquor for medicinal purposes. When the present Congress met, an amendment to the Volstead act was introduced providing that only spirituous and vinous liquors may be prescribed for medicinal purposes, and that all permits to prescribe other liquors should be void. Thus the amendment ruled out beer as a medicine. It also limited a physician to 100 prescription blanks in ninety days. This bill, in slightly different form, passed both houses. The principal dif-

ference was in the last section, regarding the right of search and seizure, the so-called Stanley amendment. The Conference Committee proposed a compromise which was accepted by the House. In the last hours of the session before the recess, the Senate refused to agree and the bill was pigeonholed. It has not been brought up for discussion since the reassembling of Congress, so that the original Volstead act is still in force. Mr. Mellon, Secretary of the Treasury, first held that, as both Houses of Congress had voted in favor of prohibiting the use of beer as a medicine, he would not issue regulations authorizing its use. Evidently he has altered his point of view, since he now holds that the Treasury Department "has no right longer to withhold these regulations [i. e., regulations under the original Volstead act] and that in so doing the department is denying to those interested their clear legal right."

It is, of course, possible that these regulations were issued at this time for the purpose of putting pressure on the Senate to adopt the amendment prohibiting beer as a medicine. The new regulations provide that not more than 2½ gallons of beer or 2 quarts of wine may be prescribed at one time for the same person. The effect of these regulations will be to allow practically unlimited prescribing of beer and wine in those states which do not have laws prohibiting the use of wine and beer as medicines. There are only eleven states without such laws. These are Wisconsin, Missouri, California, Connecticut, Massachusetts, New Jersey, New York, Rhode Island, Pennsylvania and part of Louisiana and Maryland. In these states all that will be necessary to secure the maximum of liquor (and all "invalids" will require the maximum dose) is to secure a prescription from a physician.

Self-respecting physicians should and will resent any attempts to prostitute an honorable profession. Physicians who are indifferent as to their professional honor can doubtless reap an abundant harvest, so long as these regulations remain in effect. It is inconceivable, however, that the American people will long tolerate such a travesty.—*Jour. A. M. A.*, Oct. 29, 1921.

STANDARDS IN JOURNALISM.

Willard Grosvenor Bleyer, director of the University of Wisconsin school of journalism, in a recent address before the Joseph Medill School of Journalism discussed the need of elevating the standards of the journalistic profession, especially as it applies to newspapers. As examples for comparison, the speaker described briefly the development of the American Bar Association, and then in greater detail, the evolution of the present systematized training of physicians. He referred especially to the organization of the American Medical Association, its code of ethics, The Journal, and other powers for elevating the art and science of medicine. Professor Bleyer expressed the hope that every reporter and journalistic student had read "Nostrums and Quackery" for its excellent account of the way in which blood money is wrung from poor victims by nostrum exploiters. The Council on Medical Education, too, was praised for protecting prospective medical students against inferior schools. Finally, Mr. Bleyer asked: "Is journalism any less important than the law and medicine? They treat the members. We help or hurt the whole body politic. . . . Journalism," he said, "is the only great profession unorganized." And the remedy, he believes, lies in the formation of a strong body, which, like the American Bar Association and the American Medical Association, will be possessed of the influence to require reporters to have the fundamental training. A bane of newspaper work has been that men of high school education, who have no background of history, economics or the classics, are the ones purveying the news of today. Until the standards of journalistic training are raised, and until the ethics of the profession become a means of protecting scrupulously the body politic, it will continue to be possible for shyster journalists to fatten themselves on deluded dollars from "patent medicine" advertisements, and the public look askance at the reliability of the press in general A timely discussion is this of Professor Bleyer. His criticism is not only fiercely destructive of the malignant growths which are attacking the life of modern newspaper journalism, but constructive in the suggestion of a systematically outlined and wholesome remedy.—*Jour. A. M. A.*, Oct. 29, 1921.

CANCER PROBIA.

An inevitable accompaniment of directing special attention to any disease is to arouse in a certain number of persons phobias almost as terrifying as the diseases feared. To warn the public that "moles, excrescences, fistulas and warts" "are the first signs of cancer" is to erect a specter capable of shattering even a normal mentality. To say that "symptoms of indigestion" are "signs of cancer" is so small a part of the whole truth that it is better left unsaid. Carcinoma is in the beginning a local disease. It is definitely known that irritation of tissues favors its production. There has also been accumulated evidence as to the earliest signs by which malignant growths manifest themselves. It is well to give the public such facts as these, to advise early consultation with the family physician, and to point out that we have thus far but one sure method of treatment, and that is complete removal of the dangerous growth. The condition itself is sufficiently serious and needs no elaboration as to its terrifying aspects. Give the public all the facts—but facts only.—*Jour. A. M. A.*, Oct. 29, 1921.

INTERPRETATION OF DIGESTIVE SYMPTOMATOLOGY.

Ernest H. Gaither, Baltimore (*Journal A. M. A.*, Oct. 29, 1921) asserts that the digestive specialist, as well as the general practitioner, will find it of vast importance and invaluable assistance in every case to bear in mind the trial of possibilities; malignancy, tuberculosis and syphilis of any and all organs.

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The Wisconsin Medical Journal, Official Publication

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Sheboygan	R. M. Nichols, Sheboygan	G. J. Hildebrand, Sheboygan.
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Waupaca	E. H. Jones, Weyauwega	A. M. Christofferson, Waupaca.
Winnebago	F. G. Connell, Oshkosh	H. W. Morgenroth, Oshkosh.
Wood	D. Waters, Grand Rapids	F. X. Pomainville, Grand Rapids.

SOCIETY PROCEEDINGS

BROWN-KEWAUNEE COUNTY

The Brown-Kewaunee County Medical Society met at the Hotel Karsten, Kewaunee, October sixth, about thirty members of the society being present. Local dentists were present as guests of the association. An excellent dinner was enjoyed, after which Dr. R. E. Minahan of Green Bay read a paper on the subject of "Taking the Dust out of Industry." The question of a tri-state sanatorium to include Brown, Kewaunee and Door Counties was fully discussed.

EAU CLAIRE COUNTY.

The regular monthly meeting of the Eau Claire County Medical Society was held Monday evening, October 31, at the Galloway House, Eau Claire. Supper was served at 6:30 P. M., followed by a paper on "The Selection of Cases for Radium Therapy," given by Dr. Karl H. Doege, Marshfield, and one on "Chronic Diarrheas of Infancy and Childhood," by Dr. Rood Taylor, Minneapolis.

LANGLADE COUNTY

A meeting of the Langlade County Medical Society was held at the Hotel Butterfield, Antigo, October 5. Following a chicken dinner, plans were laid for co-operating with the National Cancer Committee for the observation of Cancer Week, October 30 to November 5.

MILWAUKEE MEDICAL SOCIETY

At a meeting of the Milwaukee Medical Society, held in the Health Service Building, Tuesday, October 25, the following excellent dermatological program was given: "Exzematoid Ringworm of the Hands and Feet," illustrated with lantern slides, by Dr. O. H. Foerster; "Treatment of Some Dermatological Conditions with Diets," by Dr. C. A. Baer; "The Differential Diagnosis of the Exanthemata in Relation to the Practice of General Medicine," by Dr. Leopold Schiller; "Ultra Violet Ray Therapy of Some Dermatological Conditions," by Dr. R. G. Washburn; and "Types of Late Ulcerative Syphilis," illustrated by lantern slides, by Dr. H. R. Foerster.

The regular meeting of the Milwaukee Medical Society was held in the society rooms, November 8. A meeting of the Council was held at 7:45 P. M. followed by the presentation of several clinical cases and pathological specimens. Dr. P. H. Marsh of the University of Michigan School of Medicine read an interesting and instructive paper on "High Fat and Low Protein Diet in Treatment of Diabetes Mellitus," followed by a presentation of a case of Diabetes Mellitus with Dr. Marsh's treatment by Dr. H. Hawkins.

L. G. Sykes, M. D., *Secretary.*

OUTAGAMIE COUNTY.

The regular October Meeting of the Outagamie County Medical Society was held at Hotel Sherman, October 15, 1921, which was preceded by a dinner at 6:30 P. M. The Society had as its guests, Dr. I. S. Trostler, and Dr. R. H. Hayes, Chicago. The first named spoke upon "Therapeutic Treatment by X-ray." The second upon "Diagnosis of Chest Diseases." Both talks were highly interesting and instructive and greatly enjoyed by all present. There were 26 members present at this meeting.

V. F. Marshall, M. D., *Secretary.*

NEWS ITEMS AND PERSONALS

Dr. H. C. Midelfart and two daughters have returned to their home in Eau Claire after a six weeks' visit at the old home of the doctor in Christiania, Norway. Dr. F. G. Gade, editor of the Norwegian Medical Journal, returned with Dr. Midelfart for an extended visit.

Dr. G. L. Karnopp, who has practiced in the village of Mishicott for the past twenty-five years, has sold his practice there to Dr. C. J. Skwor of Neosho and will locate in Madison after a trip to the Pacific Coast.

At a meeting of the board of directors of the Wisconsin Anti-Tuberculosis Association, H. H. Jacobs was re-elected president; R. L. Cooley, first vice-president; Mrs. Ben Hooper, second vice-president; Dr. J. G. Taylor, recording secretary, and Howard Greene, treasurer.

Dr. J. P. Harkins, who has practiced medicine at Forest Junction for the past few years, has disposed of his property there and is now taking a postgraduate course at the College of Physicians and Surgeons, Chicago.

Dr. Verne E. Eastman, recently connected with the Presbyterian Hospital, Chicago, has located in Wausau and is doing special clinical and laboratory work at St. Mary's Hospital.

The city of Edgerton has purchased the Underhill property, which is on a hill near the center of the city, as a site for the Memorial hospital to be erected in the near future.

Dr. S. Sorenson, accompanied by his wife and daughter, has returned to Racine after a four months' tour of Europe. During the trip, Dr. Sorenson attended clinics at the various medical centers of Europe.

Drs. G. C. Nedry and C. E. Nedry, who have been associated with the Medford Clinic for the past two years, have sailed for Vienna, Austria, to take up postgraduate work. They had formerly planned to study in Philadelphia and New York but changed their plans after leaving Medford.

The cornerstone of the new St. Elizabeth Hospital, Appleton, was laid on Sunday, October 9th. The ceremony was followed by addresses given by several prominent pastors and physicians of the city.

Dr. R. J. Fairchild, who has practiced in Embarrass for a number of years, has located in Clintonville.

Dr. H. O. Worthing of Cleveland, Ohio, has located in Sheboygan.

Resolutions condemning as unethical the action of the 15 graduates of the Marquette School of Medicine, who appealed to the state board of medical examiners for licenses to practice medicine, were passed by the board of trustees of the school at the regular annual meeting. The students completed a four-year course, but were not given diplomas because they had not served one year as internes. The school in a recent ruling required students to serve as internes before receiving diplomas. Licenses were withheld for this reason.

Dr. W. F. Pechuman, who has practiced medicine in Beloit for the past twenty years, has removed to Ramona, Michigan, where it is hoped the change of climate will hasten his recovery from a serious illness which has confined him to the Beloit hospital since last June.

On Sunday morning, October 23, the rector of St. James Church, Manitowoc, conducted a special service for physicians and nurses of the city in commemoration of the festival of St. Luke, who is believed to be the patron saint of all who are engaged in the work of healing the body.

Dr. G. H. Schlenker, who several years ago practiced at Gilman and Cornell but who in recent years has been located at Menomonie, has removed to Stanley and opened offices there.

At a meeting held at the Hickory Grove Sanatorium, Green Bay, at which physicians, representatives of the women's clubs, county board, trustees of the sanatorium and others interested were present, the project of enlarging the sanatorium was fully discussed. It is very probable that Door and Kewaunee Counties will join Brown in the movement, making Hickory Grove a tri-county institution.

Dr. A. D. McIntyre, formerly chief surgeon of the Victoria Copper Mining Company of northern Michigan, has located in Hortonville.

Steps to place in effect the higher standards for nurses' education in Wisconsin were taken by the state committee on nursing education at a recent meeting in the offices of the state board of health. It was decided that the ruling establishing six months' residence prior to September 1, 1921, must be adhered to in all cases. Graduates from foreign countries will be required to take the next examination. Student nurses now in training, it was further voted, may not put in overtime in order to complete their courses before January 1, 1922. Graduates of the Wisconsin General Training school will be allowed to register under the waiver.

Dr. Harry M. Guilford, Minneapolis, has been appointed to a staff position with the Wisconsin state board of health, and will be associated with the bureau of communicable diseases. He will be available for public health addresses and will do other field work for the department throughout the state. Dr. Guilford was commissioner of health in Minneapolis from 1915 to 1919, and for six years prior to that period was with the division of communicable diseases of the Minneapolis health department.

Wisconsin spends over three-quarters of a million dollars annually to care for chronic insane in the different county institutions in the state. There are 6,357 patients in the 35 county hospitals. The cost to the state for the care of these patients was $777,533.04.

The first Wisconsin infirmary and hospital, exclusively for the treatment of diseases of the eye, ear, nose and throat, is soon to be established in the Wilkinson homestead, Cass and Mason Streets, Milwaukee, by Dr. Gilbert E. Seaman. The building is being remodeled and will have a capacity of 28 beds.

There are 412 more Wisconsin doctors prescribing whiskey at present than a year ago. One hundred nineteen more druggists are filling whiskey prescriptions than last year. There are 1,014 more doctors, veterinarians, dentists, hospitals and sanitariums holding permits to use whiskey and alcohol in caring for patients than there were in 1920. These facts are presented in the quarterly report of the federal prohibition director for Wisconsin, forwarded to Washington.

The hundredth birthday of the late Dr. W. A. Passavant, founder of the Milwaukee Hospital, Milwaukee, was observed by special services in the chapel, October ninth. Dr. Passavant, a Philadelphia philanthropist, endowed the hospital in 1863.

DEATHS

Dr. William E. McKivitt, Milwaukee, died at his home November first, at the age of 58 years. Dr. McKivitt graduated from the Barnes Medical College, St. Louis, in 1899 and had practiced at his offices at 409 Grand Avenue for twenty-five years. He was a member of the Milwaukee County, Wisconsin State and American Medical Associations.

Dr. H. J. Stalker, Kenosha, died while attending a patient in his office, October 19, of cerebral hemorrhage. Dr. Stalker was born in Schenectady, New York, August 11, 1839. When he was three years of age, his parents brought him west with them, locating on a farm near Randolph, Wisconsin. He received his early education there, then entered Lawrence College, Appleton, after which he attended the medical school of Northwestern University, graduating from there in 1874. He began the practice of medicine at Carroll, Illinois, and was

located there for seven years after which he practiced in Mauston, Wisconsin, for a number of years. He located in Kenosha in 1901 and was in active practice there until the time of his death.

Dr. Stalker served as president of the Kenosha County Medical Society and also as vice-president of the Wisconsin State Medical Society. He was also a Fellow of the American Medical Association.

Dr. Roy Brindley died at his home in Mt. Hope following an operation. Dr. Brindley was born in 1890 and graduated from Rush Medical College in 1919. He then did postgraduate work for two years and had located in Mt. Hope only a few months prior to his death. He was a member of the Grant County, Wisconsin State and American Medical Associations.

Dr. Harold B. Anderson, Beloit, died following an operation, October 7. Dr. Anderson was born in 1865 and graduated from the University of Illinois College of Medicine in 1884. He located in Beloit in 1906 and was one of Rock County's oldest practitioners. He was a member of the Rock County, Wisconsin State and American Medical Associations.

Dr. Eugene Bingham, Elk Mound, died at the home of his brother in the town of Sevastopol, October 23, after an illness of about eight weeks. Dr. Bingham was born in 1872 and graduated from the Milwaukee Medical College in 1905. He practiced medicine in Sawyer, Wisconsin, for about a year and located in La Farge in 1909. About a year ago, he removed to Elk Mound where he practiced until the time of his illness.

Mrs. C. J. Smiles, wife of Dr. C. J. Smiles, Ashland, died October 10, following an operation. Mrs. Smiles was one of the trustees of the Ashland General Hospital.

MARRIAGES

Dr. Aubrey Pember, Janesville, to Miss Hazel Luckow, Chicago, October 22, 1921.

Dr. Irving M. Addleman, Wausau, to Miss Kathryn Simons, Yorkville, Illinois, September 30, 1921.

Dr. L. H. Flynn, Eau Claire, to Miss Isabelle Larson, Eau Claire.

TABLES OF FEES AUTHORIZED AS A GUIDE FOR SURGICAL AND OTHER PROFESSIONAL SERVICES. BUREAU OF WAR RISK INSURANCE.

(Continued from page 303)

PART.	FEE.
X-RAYS.	
Hand, antero-posterior and postero-anterior views	$ 5.00
Wrist, antero-posterior and lateral views	5.00
Forearm, radius and ulna, antero-posterior and lateral views	5.00
Elbow, antero-posterior and lateral views	5.00
Arm, humerus, antero-posterior and lateral views	5.00
Shoulder joint, plain antero-posterior view	5.00
Shoulder joint, stereoscopic antero-posterior views	15.00
Clavicle, postero-anterior view	5.00
Scapula, antero-posterior view	5.00
Ribs, plain view over suspected area 10x12 plate	10.00
Location of foreign body in eye, the fragment charted in three planes and its dimensions ascertained by the method of Sweet or equivalent, complete	25.00
Teeth, dental film showing at least two teeth, one film	2.00
Teeth, each additional film	1.00
Teeth, entire set, at least 10 dental films, every apex must show complete	15.00
Foot, antero-posterior, and lateral view	5.00
Ankle-joint, antero-posterior and lateral views	5.00
Leg, tibia and fibula, antero-posterior and lateral views	7.50
Knee joint, antero-posterior and lateral views	7.50
Thigh, femur, antero-posterior and lateral views	7.50
Pelvis, 11x14, single plate, antero-posterior	10.00
Hip-joint, plain antero-posterior view	10.00
Hip-joint, stereoscopic antero-posterior views	15.00
Spine, antero-posterior view of any part (four vertebrae)	10.00
Spine, lateral view of any part (four vertebrae)	15.00
Skull, antero-posterior and lateral views	20.00
Sinuses, frontal and ethmoid, antero-posterior and lateral views	15.00
Sinuses, maxillary, antero-posterior and lateral views	15.00
Sinuses, mastoid, right and left sides for comparison	15.00
Jaw, upper or lower, lateral views	10.00
Chest, for pulmonary or cardiac diagnosis, plain	10.00
Chest, for pulmonary or cardiac diagnosis, anteroscopic	15.00
Stomach, barium meal, or equivalent 14x17 plate after ingestion, 4-8x10 plates 20 minutes apart for duodenal cap, total of 5 plates	25.00
Gall bladder, 8x10 plates, minimum of three plates	15.00
Intestine, barium clysma, 14x17 plate for position and outline	15.00
Kidneys, right and left for comparison, 11x14 plate	10.00
Ureters, as for kidney	10.00
Bladder, without argentide injection, antero-posterior plate	10.00
Prints of 8x10 plates, each	.50
Prints of 10x12 plates, each	.75
Prints of 11x14 plates, each	1.00
Prints of 14x17 plates, each	1.50

(Continued page 312)

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

Mysticism, Freudianism and Scientific Psychology. By Knight Dunlap, Professor Experimental Psychology, Johns Hopkins University. St. Louis: C. V. Mosby & Co. 1920. Price, $1.50.

The Practical Medicine Series. Vol. II. General Surgery. Edited by Albert J. Ochsner, M. D., LL. D. Series 1921. Chicago: The Year Book Publishers. Price, $2.50. **Vol. III. Eye, Ear, Nose and Throat.** Edited by Wood, Andrews and Shambaugh. Price, $1.75.

Nostrums and Quackery. Vol. II. Illustrated. 832 pp. Chicago: The American Medical Association. Price, $2.00.

Essays on Surgical Subjects. By Sir Berkeley Moynihan, K. C. M. B., C. B., Leeds, England. Octavo of 253 pages, illustrated. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $5.00 net.

Taboo and Genetics. A Study of the Biological, Sociological and Psychological Foundation of the Family. By M. M. Knight, Ph. D., I. L. Peter, Ph. D., and Phyllis Blanchard, Ph. D. Moffat, Yard & Co., New York. 1920.

A Laboratory Handbook for Dietetics. By Mary Swartz Rose, Ph. D., Columbia University. New York: The MacMillan Co. 1921.

Studies in Dreams. By Mary Arnold-Forster. With a foreword by Morton Prince, M. D. New York: The MacMillan Co. 1921.

Religion and the New Psychology. A Psycho-analytic Study of Religion. By Walter Samuel Swisher, B. D. Boston: Marshall Jones Co. 1921.

The Elements of Practical Psychoanalysis. By Paul Bousfield, M. R. C. S. New York: E. P. Dutton Co. 1920. Price, $5.00.

Nerves and the Man. A Popular Psychological and Constructive Study of Nervous Breakdown. By W. Charles Loosmore, M. A. New York: Geo. H. Doran Co. 1921. Price, $2.50.

A Study of Women Delinquents in New York State. By Mable Ruth Fernald, Mary Holmes Hayes and Almena Dawley. The Century Co., New York. 1920.

Mind and Its Disorders. A Textbook for Students and Practitioners of Medicine. By W. H. D. Stoddard, M. D., F. R. C. P. Third Edition, illustrated. P. Blakiston's Son & Co., Philadelphia. 1921. Price, $7.50.

Die Geschlechtskaelte Der Frau. Ein Psychopathologie des Weiblichen Liebeslebens. Von Dr. Wilhelm Stekel, Nurenwartz in Wien. Urban and Schwarzenberg, Berlin. 490 pp. 1921.

Landmarks and Surface Markings of the Human Body. 5th edition. By L. Bathe Rawling, F. R. C. S. 100 pp. 31 illustrations. New York: Paul B. Hoeber. Price, $2.50.

Human Behaviour in Relation to the Study of Educational, Social and Ethical Problems. By Stuart Paton, M. D. New York: Charles Scribner's Sons. 1921. Price, $6.00.

BOOK REVIEWS

Mysticism, Freudianism and Scientific Psychology. By Knight Dunlap, Professor Experimental Psychology, Johns Hopkins University. C. V. Mosby & Company, St. Louis. 1920. Price, $1.50.

In three general chapters which take up 173 pages and which cover mysticism, Freud and the psycho-analysts and the foundations of scientific psychology, Professor Dunlap has furnished a book of importance to medical men, psychologists and general readers interested in a authoritative evaluation of these subjects—subjects which have been obscure and confusing because of many theories advanced by many writers, few of whom have maintained as careful a balance as has Professor Dunlap.

This is a sane work on what is now an important and interesting subject and is most highly recommended. In his preface, Professor Dunlap has promised another work along this line, dealing with spiritualism and it is hoped we may look forward to the issuing of this volume in the near future.

The Practical Medicine Series. *Vol. II. General Surgery.* Edited by Albert J. Ochsner, M. D., F. R. M. S., LL. D., F. A. C. S. Series 1921. The Year Book Publishers, 304 S. Dearborn Street, Chicago.

We have spent much time in reading this volume on General Surgery because it is very practical and instructive for everyone. It comprises a review of the important surgical literature and a summary of important surgical facts from the long list of articles that have been written during the last year. It covers the entire field of surgery and should constitute a very handy reference to both the Surgeon and the General Practitioner.

The price of this volume is $2.50.

The price of the series of eight volumes is $12.00.

F. B. M.

Vol. III. Eye, Ear, Nose and Throat. Edited by Wood, Andrews, and Shambaugh.

Volume III is a 392 page review of the work of about 300 authors and covers carefully the developments in these specialties during the past year. We are indeed fortunate to have so able a review of current medical literature published yearly, indexed so well and making so easy a ready reference to the medical literature on a given specialty. Even original illustrations are reproduced. The price of this volume is $1.75.

Nostrums and Quackery. Articles on the nostrum evil, quackery and allied matters affecting the public health reprinted with or without modifications, from

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The Journal of the American Medical Association. Volume II, illustrated, 832 pages. Published by the American Medical Association, 535 N. Dearborn St., Chicago, Il. Price, $2.00.

Ten years ago the American Medical Association published the first edition of the first volume of this book. A year later a second, and enlarged edition of the first volume was issued. Since that time The Journal of the American Medical Association has published, week by week, articles on the nostrum evil, quackery and allied matters affecting the public health. All this material has been collected and appears in the present volume.

Quackery can never be defended; the "patent medicine" business, however, need not be fundamentally fraudulent. There is a place for home remedies for the self-treatment of simple ailments. Unfortunately, the home remedies of today are, generally speaking, those secret nostrums commonly called "patent medicines" and the methods of "patent medicine" promotion make these products a menace to the public health. The average "patent medicine" is so advertised as to frighten well people into the belief that they are sick for no other purpose than that of causing them to purchase the nostrums.

The present volume is a veritable encyclopedia of information on the subject it treats. The book contains nineteen chapters. The titles of some of these are: "Alcohol, Tobacco and Drug Habit Cures," "Consumption Cures," "Cosmetic Nostrums," "Deafness Cures," "Epilepsy Cures," "Female Weakness Cures," "Nostrums for Kidney Disease and Diabetes," "Medical Institutes," "Miscellaneous Nostrums," "Obesity Cures," "Quackery of the Drugless Type" and "Tonics, Bitters, Etc."

Syphilis in Pregnancy. *The American Journal of Obstetrics and Gynecology.* Vol. I, No. 7, April, 1921.

Now that the Wassermann test has been accepted as conclusive means of diagnosis, every case of pregnancy should have a routine serological examination, even when no suspicious symptoms are present. This might be regarded as a prophylactic measure. Gonorrheal ophthalmia is combated by a routine instillation into the eyes of every newborn child and in instances failure to do so is punishable. The prophylaxis of diphtheria is another recent development. It is said that at least 40 per cent of syphilitic women present no objective symptoms nor are they aware of their condition. This accounts for the widespread character of the disease and its innocent propagation. Hereditary syphilis is one of the most important factors responsible for many chronic diseases and the obstetricians must consider themselves responsible to a certain degree. The recent work of J. Whitridge Williams and others opens a field for broad study. If a study of a series of consecutive cases shows positive Wassermann reactions in four or five per cent, it is probable that the distribution is as extensive as is usually assumed. A more extensive study of this subject will do much to reduce the incidence of this disease.

These resolutions were unanimously adopted at the Mid-Western Association of Anaesthetists meeting held in Kansas City, Missouri, October 25, and by the direction of that body were to be sent to all Medical Journals of the country, which might be interested in that publication. The resolutions recite:

Whereas, the middle western states are being circularized with false and misleading statements regarding the general practice of anaesthesia and particularly the use of nitrous-oxid oxygen, and

Whereas, the Mid-Western Association of Anaesthetists is formed for the study and promotion of truth as it relates to the specialty of Anaesthesia in medicine, now therefore

Be It Resolved, that this society, in convention assembled, condemns the statements and the actions of Dr. J. F. Baldwin of Columbus, Ohio, in his utter disregard for truth and official records of recognized institutions as these relate to the practice of anaesthesia and his efforts to discredit scientific advance by the unethical practice of disseminating false and misleading statements among medical, dental and hospital authorities throughout the United States.

TABLES OF FEES AUTHORIZED AS A GUIDE FOR SURGICAL AND OTHER PROFESSIONAL SERVICES. BUREAU OF WAR RISK INSURANCE.

(Continued from page 309)

PART.	FEE.
THROAT OPERATIONS.	
Abscess tonsillar	$ 15.00
Abscess pharyngeal	20.00
Adenoidectomy	15.00
Tonsillectomy	35.00
Intubation and extubation	30.00
Trachectomy	75.00

Note: Including 4 weeks after treatment.

VISITS.	
Office visit	$2.00
Out visit	3.00
Night visit away from office	3.00
Visit out of city or town	3.00

(Plus mileage at $1.00 per mile one way.)

The Wisconsin Medical Journal

Volume XX | Milwaukee, December, 1921 | Number 7

ORIGINAL ARTICLES

INDUSTRIAL, STATE AND GROUP MEDICINE.*

BY BURT R. SHURLY, M. D.,
DETROIT, MICHIGAN.

Great men, great events, great deeds, it has been said, grow as we recede from them and the rate at which they grow in the estimation of men is in some sort a measure of their greatness. Tried by this standard the men, events and deeds of the world war are taking on a truer, nobler, and more everlasting significance. The World is slowly awakening to the great fact that in our own country alone State Medicine as represented by the Army and Navy took on the tremendous increase from 800 to 33,884 medical men.

The collective story of patriotism, sacrifice, painful separation from family and friends, great pecuniary loss, broken health and death, can never be told. An impatient public cares little. The impress of this terrific wave of changed medical thought and endeavor is just beginning to rise from the chaos of an overwhelming victory.

It is the individual with an experience among the wounded and dying that wrung the very heartstrings of sympathy and pathos, that tried his soul and broke his spirit, that will rise up and demand a new and better regulated governmental medical service built upon the lessons of old.

The Medical Reserve Corps of the future must be organized, classified, taught and equipped for all future emergencies. It was unfair that patriotic medical men should have their lives drilled away in silly maneuvers, that they should be forgotten with the British perhaps or lost on the rolls. That they should receive no well deserved promotion but instead be humiliated and ranked by those with political power who remained at home and came over at the end of the war to instruct and order those who had taken the brunt of the conflict. These are just grievances that require a remedy before the next war, when it will be the young men for war and the older men for War Counselors.

It is essential that State Medicine should have the force and power to safeguard the public health and prevent disease. It becomes useful and valuable as it fulfills these obligations. Unless State Medicine is regulated and its proper limitations defined, it will become a menace to the medical profession and the private practitioner at large.

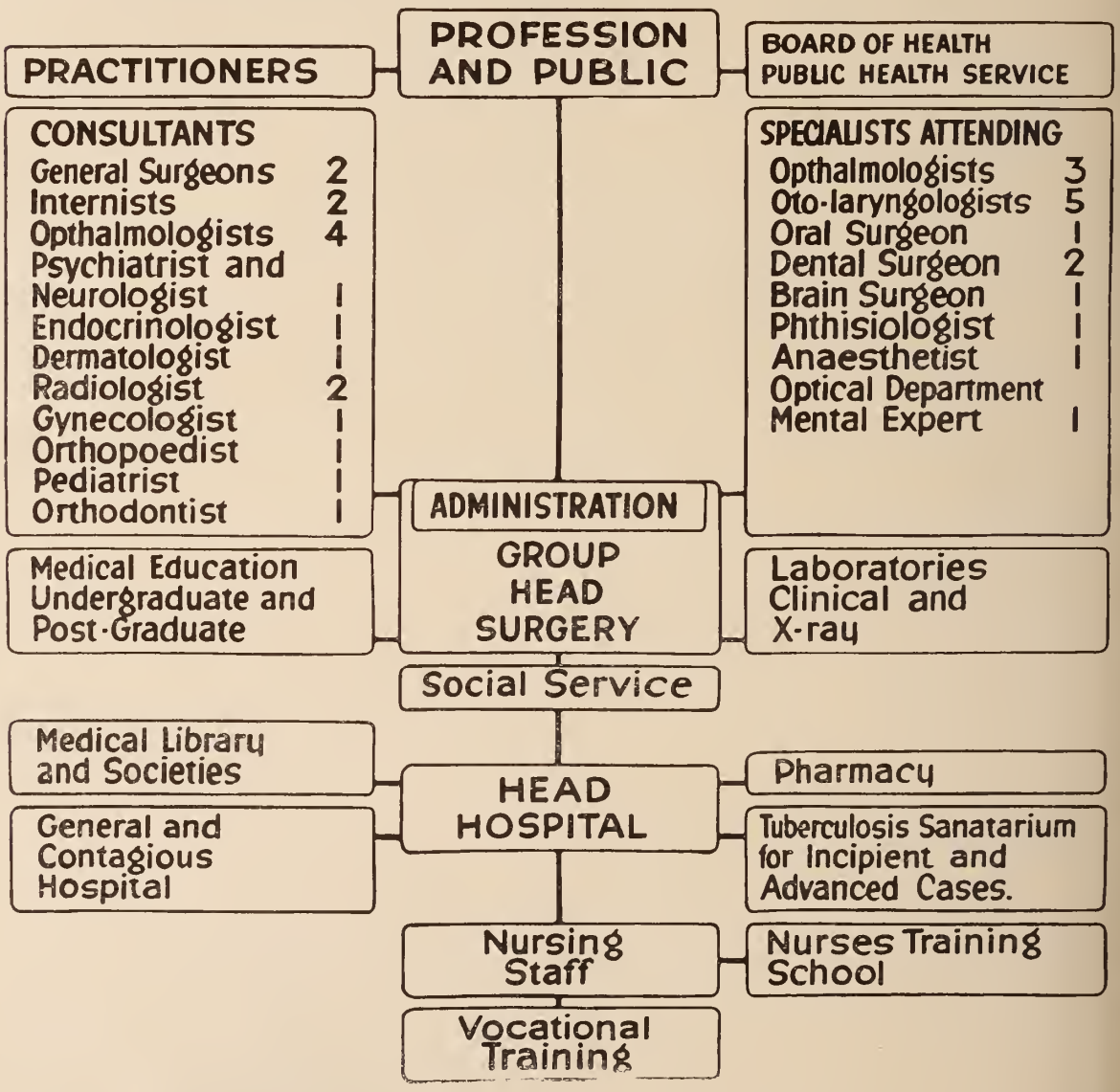
The handwriting is on the wall and the trend of the times for the Standard Oil organization, Czaresque dictatorship, Prussian autocracy is invading State Medicine. Some great political chiefs silence any murmur from the opposition by a stipend as school inspector, vaccinator, or a special donation of antitoxin. The great medico-political machine grows with each subsidized member and the private practitioner uninterested sleeps on.

It is true that the laity need instruction and leadership. It is true that prophylactic medicine, public health, and hygiene, have made marvelous scientific advancement. It is true that medical education and hospitals under the laws of standardization have progressed for the benefit of the medical student and the patient, yet State Medicine must not achieve an organization and arbitrary power that sweeps aside the fundamentals and essentials of medical practice, namely, altruism, humanitarianism, individualism, the psychology of bedside medicine, the counsellor to the mind diseased and distressed. We must beware of too many guinea pig hospitals. A few are sufficient. We must establish and maintain a balance between ultra specialism, specialism, and general practice, and we must not forget that the practical doctor of the past decades with his time honored preceptor has made, established, maintained, and sustained, the honor and glory of the American Medical Profession for more than a century.

The newer surgical method and discovery, the latest invention in instruments, the fad, fancy, and fashion, of some brilliant dreamer does not always prove the winning success that its spectacular literature would lead us to believe.

*Read before the State Medical Society of Wisconsin, Milwaukee, Sept. 7, 1921.

Those of us who have lived a quarter of a century in the practice of medicine know the storms we have encountered. We have been tossed on the seas of radicalism and conservatism. We have been criticized and abused and when we landed we learned to know that the land of health and happiness is pierced by a middle road that we now delight to travel.



Has the training of the modern medical school anything to replace the wise counsel, practical opportunity and noble inspiration afforded by the old system of the medical preceptor. I can see to-day the kindly genial countenance, and hear the wise words of medical enthusiasm of Dr. M. R. Gage of Sparta, while I held his horse on many a drive to the old County House and received my first birth-light into the great movement toward state medicine. My first introduction to group medicine forty years ago was the small boy's opportunity to watch through the office window as Drs. Gage, Beebe, Sarles and Beebe set some fractured ribs.

Industrial medicine stands for itself as a great and necessary branch of our work. Within proper and guarded limitations in a great city like Detroit, its importance is growing by leaps and bounds. It must have our hearty support and in our own Detroit College of Medicine, a strictly municipal institution, a rapidly growing course in a special industrial hospital is required of the senior class. In Michigan, your own, and many states a thriving organization of industrial surgeons

promotes a scientific and interesting program at each meeting of the State Medical Society.

The scientific progress of special surgery in the last two decades has been so rapid and expansive that together with the evolution and revolution of social medicine and the World War it has been imperative that the individual adjust or succumb. Those of us who were satisfied with methods of prebellum days must decide as to the newer classification of our work.

The group system of study, development and practice is as old as Hippocrates himself. Every proprietary teaching unit of the older days was in point of fact group medicine. The small hospital staff or clinic has exemplified for years the idea of co-operative combined effort for scientific and general professional advancement. The more perfect and enthusiastic its organization the higher the ideals and accomplishments.

The flowers of our profession, the general practitioners, may wither and fade while medical education with higher and higher standards is creating demands for luxury, diminished labor, less responsibility, more money and amusement. To meet these demands group medicine and specialism with greater compensation have been in great favor in our large cities. The public has been educated accordingly, and they look naturally to the medical center of the the large city or the university for diagnosis and guidance.

There are many dangers in this rapidly changing system that will soon surround the medical profession with grave and difficult problems. Competition is keen. Unjust and hypercriticism are fashionable and the unkind, restless, nervous, spirit of war is among the people.

Group head surgery and group medicine with hospital care are demands of the laity for service. Concentration of professional effort for efficient scientific diagnosis is welcomed. The demand of Army training and medical education for examination, hospitalization, and operation when necessary, have spread throughout our nation, and group surgery satisfies this demand for special attention.

This system will win or fail if guiding hands steer it safely from the shoals of commercialism and fee-splitting, if efficiency and humanitarianism are not sacrificed by greed, disloyalty, lack of harmony, and co-operation.

The advantages to the patient are self-evident. He realizes fully the necessity of laboratory, X-ray and dental examinations and hospital observations at a fair fee.

The group system adds the danger of machine diagnosis and repair shop methods. It is said that one of our automobile hospitals is so highly specialized that the operating room similizes the assembling plant to such an extent that one man prepares the field, a second makes the incision, a third operates, a fourth sutures the wounds, and a fifth puts on the dressing, while the sixth, the anaesthetist, moves the patient to his room, and the seventh brings in another patient. Humanitarianism is so far removed that the eighth, who takes the history, is the only one who can recognize the patient on the street some weeks later, if the patient is lucky enough to get there.

Group head surgery must be affiliated with, or control, a head hospital and teaching opportunities, to be scientifically progressive and efficient.

A marvelous change has come over the armamentarium of the laryngologist of two or three decades ago. A laryngoscope, a galvano-cautery, a Matthews tonsillome, a Jarvis snare, and a few spray bottles would make a busy specialist. He is now a dependent. Scientific progress and public demand have required the nurse, the assistant specialist, the hospital and laboratory. It is rare indeed in our large cities that tonsillectomy, mastoidectomy, or many minor operations are performed without operating room facilities.

A committee for war work consisting of Drs. Richardson, Mosher, Bryan, and others, deserve the credit of establishing for the first time in the history of our country, specialists in the Army of the United States.

By their efficient and patriotic endeavor, ear, nose, and throat men were permitted to join the Army as such. Under their guidance and by order of Surgeon-General Gorgas, group head surgery became possible. The work accomplished, the sacrifices made, the life-saving value of the special skill applied and the influence of this system of special co-operation in the final success of the medical department in the world war will be spread upon the records. Proper credit will be placed where it belongs.

At the beginning of the war, the American Medical department had no organized corps of specialists in any field. In the head specialty, for example, regular medical officers were assigned to

duty as eye, ear, nose and throat specialists, who were without interest or training in the work. The War Committee changed this immediately. Group head surgical units were organized and successfully performed enormous labor in this country and abroad. The original estimate of 200 beds in a 1000 bed hospital devoted to Army hospital work was approximately correct.

In the Base Hospital 36 A. E. F., originally 1000 and finally 3000 beds, which I had the privilege of directing and commanding, 15,824 sick and wounded, were admitted. Of this number 27.3% were operated or observed by the group head unit.

It is the tremendous success of group organization in the war that has created its demand today. In my opinion, it has come to stay because it is logically correct as the method to reach and serve the profession and the public at a minimum of expense and energy.

We must realize that the modern patient is impatient, hypercritical, unstable and changeable. The doctor of today is not his of tomorrow. The law of obligation, the mere matter of appointments at the office or for operation, are more often broken, bills are more frequently returned with the Postmaster's notation — "left no address". Appreciation of professional service has diminished and the wise counsel of the experienced practitioner is turned aside for the fad of the osteopath. The fashionable clique change their doctor for one more fashionable. The fault is within ourselves.

To meet this new and strange psychology we must establish a remedy that will hold a stampeding, panic-stricken, sick, public until adjustment takes place. Standardization of medical colleges, hospitals, and specialties, is great and glorious work, but it is too slow for a remedy. This is the age of the aeroplane, the automobile, the transcontinental flyer, the ocean greyhound, the autobandit, and the movie. This is the mechanical and amusement stage of the world. More than 10,000,000 men have been moving to or from the great guns of the war. This is the age of vibration and storm; the quick lunch, the short sleep. The short skirt and short hair are the rage. A gentle question may receive a burst of anger. A simple request to perform some simple duty may be met with the ultimatum to get some one else. The public and profession will not wait. The explanation is that the world is restless, irritable, and less honorable.

The remedy is found in group medicine and service. The physician, the surgeon, or the specialist, can be changed within the group domain to satisfy the whim, fad or fancy, of the patient. The most renowned and learned professor of the knife is helpless to cure without his patient. The research scholar is useless without his human material. The specialist must have his ear, nose and throat to demonstrate his new operations. Our remedy is group head surgery.

ADVANTAGES OF GROUP PRACTICE.

The advantages of group practice are first, better diagnosis and more scientific work, co-operation, mutual interest, conservatism of effort, quick service to the profession and the public; the use of team-work at all times of the day or night; the division of labor; specialization along lines particularly interesting to the individual; the pleasure of working among the sick where no one man thinks he owns the case; co-operative system in buying of instruments and general equipment; conservation of office space; the practical value of an office and hospital together that can be operated by the same staff for the mutual advantage of the patient and practitioner.

If State and industrial medicine with health insurance are to absorb private practice it will be necessary finally to adopt a feudal group system to protect the practitioner and the public who demand private service, just as it was necessary to organize against the hordes of barbarians who swept over Europe from Turkey. It will be of advantage in case State Medicine and State Hospitals increase, to combine with other groups for their personal protection and existence.

The success of the group is in relation to the ordinary attributes of industry, intelligence, harmony, and a spirit of co-operation, all of which characteristics ultimately receive their full reward.

DISADVANTAGES OF GROUP PRACTICE.

The personal equation may be lost between the physician and the patient; the machine and dispensary methods prevail unless carefully guarded. It is difficult to obtain a group of men who are temperamentally fitted to associate in harmonious endeavor. It is difficult to find practitioners who will always operate under the Golden Rule, but as

this is difficult in almost any walk of life, it may not be considered as a disadvantage. It is difficult to obtain men who do not over-estimate their personal value and who entertain sufficient broad and humanitarian views to handle patients properly.

In conclusion it may be said that State, Industrial, and Group Medicine and Surgery have come to stay as definite divisions of medical practice. Their progress is rapid and ominous. The mighty organization of State Medicine is rapidly classifying and extending the work. They are building and over-building great hospitals with a lavish expenditure of the people's money. They are employing and controlling a mighty army of doctors and nurses. Theirs is a good and noble work, but unless some counteracting force will limit the extravagance and wastage, unless this great medico-political machine will curtail and regulate the wholesale treatment and encouragement of people well able to pay the physician and surgeon, the general practitioner will suddenly awake to the fact that the state competition of clinics, hospitals, and consultations, in his own town, supported by his taxes, has deprived him of a chance to live and support his family.

When the Boards of Health go beyond the police function for which they were originally intended, build pay hospitals and collect for nursing and service they compete with the profession and I believe they should be regulated by law.

Industrial and Group Medicine are in their infancy. The system, in my opinion, is correct and with proper leadership will solve many economic and scientific medical problems of practice and education in the future.

THE DOCTOR FOR THE AGE OF DOUBT.*

BY NEIL ANDREWS, M. D.,

OSHKOSH.

Our age is pre-eminently an age of doubt. The interrogation point confronts us along every path. were I to choose a coat of arms to adequately represent our period, it would be that of a question mark with the inscription "I am from Missouri, show me."

1. Look at the Religious World. The theology of the Christian Church is questioned as never before. Many ancient dogmas have been thrown into the discard. Queries rise thick and fast. Are the great tragedies that daily occur in human life consonant with a loving heavenly Father or a conquering Christ?

2. Observe the Industrial World. By labor, capital is looked upon as a hydra-headed monster whose tentacles spread in manifold directions to embrace and crush the interests of labor.

By capital, labor is looked upon as an ignorant and ungrateful wretch seeking to destroy, by theft, or fire, or murder, the forces which they control.

Lockouts and strikes are of daily occurrence. Who is to prevail? What is to be the outcome of all this wretched turmoil? Is the Bolshevik to win? Are the principles of the Third Internationale to supersede those of big business?

3. Study the Political Sphere. Amid the upheavals of today, doubt is everywhere regnant. Shall monarchies pass into oblivion, or shall republics drift into limited monarchies? Does legislator spell statesmanship, or does it denote graft? Are the standards of loyalty to give way before the red flag of anarchy?

4. This same atmosphere of doubt which darkens the sphere of politics, industry, and religion shrouds the Medical World.

In spite of the splendid achievements of the past century, the dawn of antisepsis and asepsis, the era of serums and vaccines, the enrollment of electricity as one's servant, the splendid equipment of laboratories, and a wealth of other achievements, *doubt,* hope-dispelling, progress-restraining, damning doubt, has taken hold of the people, and has even burrowed into the profession itself.

In striking array, I can see approaching the Christian Scientist with his healer; the Osteopath with his mechano-therapy; the Chiropractor with his adjustments; the magnetic healer with his laying-on of hands; the herbist with his herbs culled from a thousand gardens, and with these, an immense throng from our own patients who proclaim the virtue of these various healing cults and hurl anathema at the doctors. The world stands in doubt.

The cause of this doubt is not difficult to find. It is three-fold.

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*Read before the State Medical Society of Wisconsin, Milwaukee, Oct. 7, 1921.

I. It lies partly in the flamboyant claims of the various healing cults which have arisen the past few years, claims which too often have had no basis in fact, but claims so persistently advanced and so adroitly advertised that large numbers of the laity accept the claims as true.

2. Doubt is further increased by our own unwarranted assertions and our failures to produce results. Too often our achievements have fallen far short of our claims, and, equally as frequent the results have been secured regardless of our efforts.

3. Doubt is still further enhanced by the unrest apparent in the profession itself. We know that there is something radically wrong with the present day practice of medicine. The increasing advocacy of the various healing cults, the lessening regard for the physician in general renders us ill at ease. A few generations ago the ipse dixit of the doctor was sufficient. Gradually, with increasing intelligence of our clientele, our results are observed, our statements are questioned and weighed in the balance,—we are many times found wanting.

I. The doctor for this age of doubt must know his business. It is not simply to cure people of disease or to palliate it. It is not primarily this. It is pre-eminently to prevent the onset of disease.

In the past, emphasis has been on the palliative and curative side; in the future the emphasis is to be placed upon the preventive side.

The physician of the past worked upon the stream of disease at the mouth of the stream; the doctor of tomorrow must work from the stream's source.

The physician of the past studied the individual, post mortem to ascertain what killed him; the doctor of tomorrow will observe him in health and study how to maintain health's grasp and power.

The physician of the past emphasized the need of great hospitals and wonderful paraphernalia for the cure of men and women upon whom disease had placed its powerful arm and irreparably injured their organisms; the doctor of tomorrow will inspire men to equip institutions and provide well-organized service to keep men well.

The physician of the past spent his efforts in restoring or attempting to restore the efficiency of their clients. The doctor of tomorrow will labor assiduously to keep his clientele's efficiency at its best.

There never was a time when the profession of medicine offered such opportunities. No profession exists in which the future is so full of promise. Past accomplishments in our art are to be eclipsed by future achievement. Think of the opportunities which lie at the door of the practicing physician. Every patient who crosses his threshold offers a problem of preventive medicine. This appraisement of the practice of medicine is no idle dream. Its realization depends upon us.

Much of the so-called Scientific Spirit of our age in the diagnosis and treatment of disease is ludicrous. The way physicians fall for it is appalling. I have read many a sign "X-ray Diagnosis," as if this were the essential factor in the discovery of disease. I have heard laboratories—chemical, bacteriological, biological—extolled as if they were the last word in ferreting human ills.

The careful elicitation of the patient's history and symptoms, with subsequent thorough examination, practiced by the old family doctor, has given way to these later methods, and in many cases to the detriment of the patient, and the retrogression of medicine.

Among too many the diagnosis of disease consists of the use of divers paraphernalia. They carry around a blood pressure apparatus in one pocket, and a baby Basal Metabolism outfit in another, while about their person they have secreted a diminutive laboratory and the latest polygraph.

The doctor for the age of doubt, while recognizing the worth of these and all other agencies, must estimate them at their proper value. They are but aids to our diagnosis.

Do our patients complain of fatigue? What is the nature of it? Is it due to their occupation, to their posture, to their environment? At what period day or night does it appear? To what does it lead? How is it to be avoided? Having arisen, how is it to be controlled?

Do our patients complain of a sore throat? What is the cause? What are the possible end results?

Do they complain of myalgias? From whence did they arise? What phenomena are associated with them? What complications are to be considered? What is to be the outcome?

Do they complain of loss of appetite? What

is the causative factor? What does the future portend?

All of these and other complaints do not exist without a cause. It is up to us to find it. All of these are inevitably followed by certain results. It is up to us to consider, to weigh, and to prevent them.

For this we need not the training of the laboratories or the highly specialized apparata. What we need and what the age demands of us is the seeing eye, the hearing ear, the tactile sense, and the understanding brain together with the exercise of a scientific imagination.

II. The doctor for this age of doubt must not only know his business; he must also know his limitations. Failure to acquaint one's self with his limitations is both a comedy and a tragedy.

It is ludicrous to recall what claims we have sometimes made for our efforts, our skill, our knowledge and resultant success in our care of patients.

The Internist describes a man at the grave's edge when lo! the administration of some favorite drug mastered the disease and life was saved.

The Surgeon tells us of the patient who suffered severe abdominal pain and the surprising results he secured by the removal of an appendix, the drainage of a gall bladder, or a skilful colectomy.

The various specialists narrate the incident of intermittent myalgia and painful arthritis that disappeared like the mist before the morning's sun with their removal of the tonsils or their extraction of the teeth.

But alas, the Internist's favorite perscription often fails, and the grave swallows the victim.

The Surgeon's skill avails little for the abdominal distress has returned with renewed intensity and the appendix has been taken, the gall bladder is missing, and the colon has been disenfranchised, and nothing remains further for his knowledge, his skill, and his knife.

The Specialist's clients are still in the hospitals or sanatoria, and mud baths for their arthritis and myalgia, their tonsils have been needlessly massacred, their toothlessness adds to their miserable condition, and the Specialists have failed.

However, in spite of these facts, these daily experiences, many doctors *will* not learn. They continue to laud their drugs, they persist in meddlesome surgery, they prosecute their slaughter of unoffending tonsils and of efficient teeth.

Internists and Specialists are too frequently the Dromeos in a continuous comedy of errors. The tragedy of it all is that they will not learn.

It is not required that a doctor know everything that concerns medicine. He cannot, if he would—life's span is too short. He should, however, know the principles that have to do with health and disease and assign those principles their proper place in the scheme of prevention, diagnosis, prognosis and treatment.

He may not know all about the manipulation of the X-ray apparatus, but he should be sufficiently trained to interpret the findings of the Roentgenologist.

He may not know how to employ the outfit for finding Basal Metabolism, but he should know enough about it to wisely apply its readings in his diagnosis.

He may not be sufficiently proficient to make a chemical analysis of the blood and excreta, but he should know how to properly value the report and assign it its proper place in the practice of his art.

He may not be skilled in operative procedure, but he should know enough to summon the Surgeon when his service would secure achievement.

Emphasis upon the recognition of one's limitations would not be complete without reference to the poor surgery that is rampant and which threatens even worse surgery in the coming generation.

Today every community is building its own hospital. With the increasing hospitalization, a flood of incompetents have become full-fledged surgeons over-night. They may have been good physicians, but now that a hospital is in their locality, they believe they can do sufficiently well the surgery of their community. The work they do is too often crude and tragic. If none but themselves were called upon to suffer, the problem would be easy, but, alas, good surgery suffers, and the patient often lapses into a life of invalidism or an untimely grave.

I venture that there are few surgeons of merit who have not been called upon with increasing frequency of late to repair the results of some bungling work of a man who should have known better than to attempt the task.

As an Internist I have observed with horror

some of the work of these made-in-a-day surgeons, and I believe that we should speak sharply against this practice. If the initiative does not arise with us, the public will sieze it, and good and bad will alike suffer, and discredit will be thrown upon the art of surgery that will be difficult to overcome.

It should be insisted upon in surgery as in all other departments of Medicine, that a doctor know his limitations, and that he will not at the expense of his patients, attempt a work for which he has had no special training.

III. The doctor for the age of doubt is one who will not hesitate to avail himself of every therapeutic measure necessary to restore health and secure the efficiency of the patient.

The favorite indoor sport of too many medical men consists in damning the various methods of healing without an adequate conception of methods or results achieved.

With a conceit born of ages of subservience to medical dicta, we refuse to recognize as efficient any but our own methods.

The doctor of today should enlarge his vision of therapeutic endeavor. When men and women come to us with their complaints, they want relief, they want that relief as speedily as possible, and they do not care how it is effected.

Is it not possible that there are some methods of healing that we do not know? Is it not folly to act as if all methods for the attainment of health reside in ourselves?

There are none so blind as those who will not see, and has not this too often been our attitude toward demonstrated therapeutic efficiency? This very blindness has frequently driven patients from our care, and in some cases to their permanent benefit.

A fellow man tells me about a skin lesion which he had sought for months to cure under the advice of able physicians and to no avail. At last it yielded to heliotherapy. Is it just or honorable to doubt his statements and denounce the one who employed heliotherapy?

Another informs me of the improvement in his health secured by deep spinal manipulations. Is it wise to belittle his assertion and to damn his benefactor?

Still another finds his health restored by allegiance to a creed. What right have I to maintain that it is all wrong and faith had nothing to do with his healing?

I, for one, believe it is about time we spent less energy in the criticism of those who employ methods differing widely from our own, and it is imperative that we seek out wherein their effectiveness lies, and to employ the method no matter the names by which they are called.

If my patient's condition is to be restored to normalcy by the creed of the Scientist, why is it beneath me, as his adviser, to urge his enrollment in that faith?

If my patient's interests demand a thorough manipulation of the spinal muscles, why should I be an anathema if I recommend him to an able technician for his treatment?

If my patient's health will be best maintained by the application of electro therapeutics or hydro therapeutics by those who know how to apply them, why, in the name of efficiency, good health, and sound sense should I not advise it and cooperate in the work.

I have seen men who have consulted Specialists of Boston, New York, Chicago, and Rochester, and without result, yield to the therapeutic efforts of other cults.

I have studied men; big, brainy men; men who do things; men who are masters of men; I have seen these men turn with faint hope to mechanotherapy, and return with renewed health via the drugless route.

It is these facts that lead me to emphasize that the doctor of today must be a man broad enough in his vision to see the efficiency in other methods, and big enough in his profession to employ these methods.

IV. The doctor of today should cultivate the press. Of all modern agencies for the information and education of mankind, the newspaper is among the foremost. Of all agencies, however, that might be employed to the admirable ends of our profession and the health of the world this is the most neglected.

There appears to exist a fear of the press on the part of the profession. To have one's name mentioned in connection with a case is to be suspected of illicit advertising.

Somehow it has crept into our silent creed that the press is to be avoided, and that its use is not ethical.

The only place a doctor should be ashamed to

find his name in the press is in its criminal column or in a discovered Sucker list.

The affection of the daily press should be courted, and its power used.

What is the greatest thing in the World? Money, friends, love? No, RICH, BUOYANT HEALTH. This is the open sesame to everything worth while in life; it is the way of greatest efficiency; it is the necessity of enduring achievement. It is the desire of the man in the hovel and the man in the mansion, of the man with the hoe and the man with the pen.

We cannot reach these with the preventive medicine of our own and succeeding generations as well or as quickly as by the use of the newspaper. It goes everywhere, and stands ready to carry news worth while to everybody.

Instructive exercises in keeping fit, seasonal diseases, threatening epidemics, general medical advice, these and kindred topics wisely discussed by the doctors of a community and set forth in terse Anglo-Saxon will be accepted by any worth while paper, and will be valued by the households into which that paper goes.

Indeed one has but to observe the health columns of some of our cosmopolitan dailies to note the power that the press may wield in this direction. For example, take the Chicago Tribune: Under the masterly pen of Dr. W. A. Evans, the "How to Keep Well" column is filled with suggestions of immense value to every reader, and has produced results in saner hygienic conditions, and in the maintenance of a physique that is normal and efficient. What is true of the Chicago Tribune is true of many of the other dailies. If the doctors choose, it will be true of all the papers. The doctor of today must use the power of the press in this way.

Observe the work of the Public Health Service in our own and other lands. The all too prevalent diseases amongst young men and women have been vividly portrayed by its employment of the press. To those who were unfortunate enough to be afflicted it gave advice and instruction. To those who were still free, it strikingly depicted the evils in their train, and thereby made for better and more vigorous manhood and womanhood, and cleaner national ideals.

The hypocrisy that characterizes so much of our subservience to the so-called ethics of our profession would be scattered by a wise utilization of the printers' ink.

If you have anything worth while for the community in which you live, give it to the editor of your daily paper. He will print it. He always has printed it, and he always will print it.

When I see the names and faces of some of the leaders of the profession in papers and magazines, I hail it as a good omen for the health of the readers.

Remember it is not self-advertising that is wanted; it is health advertising. It is not fake cure alls; it is proven wisdom. It is not technical phrases, but heart-to-heart talks in the vernacular on the greatest theme in the world—health and how to maintain it. If we have anything along these lines, publish it. Above all, do not criticise the fellow big enough to get into the dailies. Such criticism is but evidence of senility, of jealousy, or of foolish, inexplainable adherence to the tenets of the dark ages.

The doctor for our age of doubt is one who mingles brains with a plentiful supply of printers' ink, one who maintains ethics be changed, if only the public be served.

Medicine is forever seeking new specialities to which men devote themselves. Groups are being frequently organized to meet the public demand for greater efficiency. Instruments, either new inventions or refinements of old ones are daily advertised. Laboratories are multiplying and their workers are legion. We appear to think that in this way we will increase our efficiency and dispel the doubt that rests upon the profession. We are all wrong.

The old doctor, the idol of by-gone days, has indeed been rejected; a new one is desired. Cult after cult demands a hearing and proffer their claims. From no new cult, however, will the healer come. From no further division of medicine, from no extension of laboratories, from no development of instruments will the diagnostician appear. He will emerge from the old family physician of a few decades past, from the new scientific spirit of the present, from a commingling of these two will arise, phoenixlike, the doctor for our Age of Doubt and will establish for himself a place greater than any the family doctor of times past ever acquired, and will retain it with an efficiency and glory that will know no crucifixion by the crowd.

BLOOD TRANSFUSION.*

BY ROGER T. COOKSEY, M. D.,

MADISON.

From the early ages, Medical Literature is filled with theories, methods, and descriptions of different devices, etc., for blood transfusion. It has always been one of the dreams of the Medical Profession, and the perfection of it was looked forward to with great anxiety and promised unlimited aid in the treatment of all kinds of ailments.

As early as 1492 it is reported that a Jewish physician in an attempt to save Pope Innocent VIII, transfused him with blood from three young men. Of course this was disputed as the circulation of the blood was not understood at that time but it is generally conceded that he did make some kind of concoction from their blood for the Pope to drink, which not only proved unsuccessful, but resulted in the death of the three boys.

In 1665 Richard Lown of England was the first to practice Blood Transfusion, experimentally, by anastamosing the artery of one animal into the vein of another by means of a canula.

In 1668, Dings, a Frenchman, successfully transfused a man, using the blood of a lamb. Transfusion was then practiced a great deal and so many deaths resulted that the Supreme Court of France forbid it until approved by the Faculte of Paris. The approval was not granted so for about a hundred years it was at a standstill.

It is interesting to know that the introduction of the infusion of normal salt solution did a great deal in delaying the perfection of blood transfusion. This was introduced in 1875 and for about 30 years, few attempts were made at Blood Transfusion because of the good results obtained with the normal salt solution.

During the 19th century a great deal of progress was made but there remained two factors which impeded its progress.

1. The clotting of the blood in transfusing from donor to recipient.

2. Occurrence of Hemolysis. These symptoms of Hemolysis were attributed to getting air into the veins.

The first stimulated the perfection of devices for saving time and blood vessel surgery, and also led to the finding of chemicals which delayed coagulation. Crile and his work on surgery of the blood vessels is one of the pioneers of blood transfusion and a great deal of credit is due him for the perfected method we now have. The work of Moss and his blood grouping made the danger of Hemolysis practically nothing.

The first Blood Transfusion performed in man with blood rendered incoagulable by the addition of Sodium Citrate was done by Prof. L. Agote of Buenos Aires, Nov. 14, 1914. Lewiston determined the proper dosage which can be used with safety and thus developed a method which unites four advantages in surgery of extreme importance, facility, rapidity, efficiency and security, and which fulfills in every detail the requirement of the ideal.

Now that blood transfusion is almost perfected, we find that it has not the powers once attributed to it, but with the great benefits derived from it, and with the danger so decreased, practically under control, many lives can be saved and a great many prolonged by its use.

INDICATIONS.

What are the effects of transfused blood? It is a homologous transplant, so the following things are accomplished.

Restoration of the bulk of the circulatory fluid.

Provision of oxygen and assimilable pabulum of tissues.

Increase of coagulability.

Stimulation of the hematopoietic organs.

Increase of resistance to infection by its antitoxic and bactericidal properties.

As early as 1872, Lusrink said, "Transfusion is indicated in all those pathological conditions where the blood in quantity and quality is so altered that it is unfit to fulfill its physiological duties."

I. *Transfusions for Actual Hemorrhage.*

a. Traumatic.
b. Gastric and Duodenal Ulcer.
c. Post partum.
d. Ruptured ectopic pregnancy.
e. Typhoid hemorrhage.

II. *Transfusion in Connection with Surgical Operations.*

a. Preliminary to, during, or just after operation.

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b. For post operative hemorrhage.
c. For post operative shock.
d. For post operative anaemia and prostration.

III. *Transfusions for the Relief of Hemorrhagic Conditions.*

a. Purpura hemorrhagica.
b. Haemophilia.
c. Hemorrhages secondary to:
   1. Blood diseases.
   2. Severe infections.
   3. Jaundice.
   4. Idiopathic uterine.

IV. *Transfusions for Blood Disease.*

a. Pernicious Anaemia.
b. Leukaemia.

V. *Transfusions for Infections.*

a. Infections with pyogenic organisms.
b. Subacute streptococcic endocarditis.
c. Subacute infection of any nature other than septicaemia.

VI. *Transfusions for Intoxications and Poisonings.*

a. Toxaemia of pregnancy.
b. Eclampsia.
c. Benzol poisoning.
e. Illuminating gas poisoning.
d. Uraemia.

VII. *Transfusions for Debilitated Conditions.*

a. Cancer.
b. Malnutrition.
c. Simple anaemia from any cause.

The dangers that used to be associated with transfusion have so decreased that now it is considered more of a therapeutic measure, nevertheless it is often one of the most difficult questions for a surgeon to decide. Not every patient that hemorrhages will die. Serum, subcutaneous injection of whole blood, calcium, may stop hemorrhage, but will the simple cessation of bleeding be enough to save the patient's life? How are you to decide just how much of a hemorrhage one must have before blood transfusion is absolutely necessary?

There is a drop in R. B. C., blood pressure falls, and W. B. C. are supposed to increase to a certain extent. It is impossible to fix any set time at which transfusion must be done to save life, but two things must always be considered, the rate of the loss of blood and the blood pressure. 70 M.M. of mercury is absolutely the danger limit, or rather when the blood pressure reaches that point the patient will die unless transfused. It is dangerous to wait that long, however, as many times the blood pressure reaches 70, just before death. After an excessive hemorrhage, transfusion of blood alone raises the blood pressure and holds it. Salt solution never raises pressure twice. REPEATED, and not *simple* examinations of blood and blood pressure should be made. They are not of so much benefit immediately following a hemorrhage because there is a temporary contraction of the blood vessels and the blood pressure remains the same and the blood remains undiluted in the contracted blood vessels. Some hours later the plasma infiltrates and the blood vessels relax and blood pressure drops.

It is a great deal better when in doubt to transfuse. It has commonly been said that, in this kind of cases, ward patients have always fared better than private room patients, because transfusions have been done more quickly and valuable time not lost in long consultations.

At this point I think it appropriate to say a word or two about the diagnosis of hemorrhage. To the older surgeons it is usually simple, but at the same time it might be very difficult for younger men to differentiate between:

1. Broken compensation.
2. Shock.
3. Perforated ulcer.
4. Acute pancreatitis.

The symptoms of a broken compensation and hemorrhage are practically the same and it often takes a good clinician to differentiate. However, a persisting diminishing blood pressure and decreasing blood count and no improvement in symptoms in spite of proper treatment indicates hemorrhage. In the other conditions, a very careful history is of the most importance and in the excitement that is usually caused by the families at these times, it is too often neglected. Bernheim considers the characteristic facies of a patient with hemorrhage as of the most importance in the diagnosis, and describes them as having a "Look truly gruesome and cadaverously cyanotic.

DANGERS.

The first and most important danger is:

I. HAEMOLYSIS, the symptoms of which are: chill and fever, marked prostration; haemoglobin in first urine voided, if light; if severe, tubules of kidneys are stopped by haemoglobin, followed by uremia and death.

II. ACUTE DILATATION OF HEART (old and young, typhoid, give death).

III. EMBOLISM (clot in needle).

IV. SEPSIS.

V. TRANSMISSION OF A DISEASE (always test for Syphilis.)

TECHNIQUE.

Prepare arm of donor surgically, apply tourniquet lightly above the elbow. Puncture either Median Basilic or Median Cephalic with large needle or cut down on vein and insert conula. By using fine straight intestinal needle, vein can be transfixed to skin—a large size needle 15 gauge inserted. Let the blood run into sterile graduated glass jar which has 30 C.C. of a 2% sterile solution of Sodium Citrate at the bottom. Stir with glass rod. The flow of the blood should be in a continuous steady stream. Often there is a sudden drop in veinous pressure or the tourniquet is too tightly applied and there is a slowing up of the blood stream into the citrate solution. Immediately withdraw the needle and insert another one. If the blood is allowed to flow in an impeded stream, there will be a clotting of part or the whole of the blood due to the coagulative change that took place in the blood in transit to the citrate solution. Draw off 500 C.C. of blood. If more blood is needed, add enough Sod. Citrate to maintain 0.24%. Then take to patient's room where there is an irrigating flask, rubber tube, needle and salt solution, etc., and inject into patient's veins. Let it run slowly to prevent overloading the right side of the heart. A marked slowing of the pulse, syncopal attacks, dyspnoea, cyanosis, a sensation of cardiac oppression, or excruciating pain throughout body especially localized in the small of the back should be interpreted as danger signals and if these persist after temporary stopping of the flow, it is advisable to conclude the operation at once and another donor should be secured.

In most cases it is better to give from 500 to 750 C.C. at one time and repeat in seven days, if necessary. Better results are obtained than when one large amount is given.

BLOOD GROUPING.

Depending on the ability of the serum to agglutinate the corpuscles of other individuals and of the corpuscles to be agglutinated by the serum of other individuals, every person falls in one of four groups.

MEDICAL PRACTICE IN WISCONSIN.*

BY W. H. WASHBURN, M. D.,

MILWAUKEE.

Medical practice in Wisconsin during the past 75 years has undoubtedly been typical of medical practice everywhere during that period. We have had our leaders and our followers, our self-assertives and our modest, retiring and devoted physicians. We have had those with a morbid sense of injury and those suffering from megalocephaly, the ostentatiously diffident and the brassy. We have had those whose first thought was efficient service and we have had those "out for the tin".

The great majority of us have been neither very wise nor very foolish, adopting without much ado the prevailing opinions and practices of the day and undoubtedly accomplishing something in service to mankind in ameliorating suffering and in postponing death.

In times of stress and crises we have rendered our service both to mankind and to the State, and to the Nation, as have our confreres in sister states; and we have paid our taxes with not more than the ordinary amount of grumbling, complaint and protest.

Inasmuch as this is the 75th anniversary of the establishment of the Medical Society of the State of Wisconsin, it seemed to your committee that some one should be selected to present a paper on Medical Practice in Wisconsin, whose own individual recollections extended over a goodly portion of this period.

Medical practice in Wisconsin in the '60's of the last century did not differ in any great degree from that of the year 1800. To be sure, anaesthetics had been introduced into surgical practice and

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indiscriminate blood-letting was growing in disfavor. Medical art, lacking the sure foundation of scientific knowledge, was imperfect to a high degree. Pharmaceutic chemistry was scarcely in embryo. Drugs were crude, bulky, nauseating and disgusting. It was a time when rival "schools" of medical practice were equally sure of their ground, bigoted in their opinions, intolerant of criticism, but freely and viciously criticising one another. In those days, much was heard of Allopaths, Homeopaths, Eclectics and Thompsonians. At afternoon "teas" and at sewing circles the merits of the different "pathies" were discussed, not only freely but often acrimoniously, and individual patients and their ills were cited as evidence pro and con. I recall two patients each suffering from the same disease, acute rheumatism, being watched for weeks to observe a practical and conclusive demonstration of the comparative merits of Allopathy and Homeopathy. The patient under the care of the Homeopath recovered first and therefore great was Homeopathy and greatly to be praised. Another proof in the same direction was afforded by two cases of scarlatina. Both patients recovered, the one under Homeopathic treatment a little the first, and the recovery was perfect, but in the other case the patient recovered minus a goodly portion of his upper jaw and some of the lower jaw, together with a perforation of the cheek about an inch in diameter, due to Mercurial salivation. These two cases were long remembered and often cited as proof positive of the superiority of Homeopathy over "Allopathy" and the former practitioner was firmly established in a lucrative practice. It may be added that another case with a less happy termination never became known to the public, owing to the kind heart and charity of the "Allopath" concerned. A patient was suffering from intestinal colic which was not relieved by Homeopathic attenuations whereupon the "Allopath" was called into consultation and advised a "full dose" of morphine. Not knowing that a "full dose" could be anything less than ten grains, that amount of morphine was given. The pain was permanently relieved.

As long as medical practice was based on reasoning of a deductive sort rather than upon the sure foundation of induction, any theory or school of practice might *possibly* be correct and as a consequence the adherents to the different schools and the members of the different schools were most emphatic and violently partisan in their attitude.

The term "Allopath" was applied by the Homeopathic practitioners to Non-Homeopaths, but in reality there never was such a "school" of practice. Members of the so-called "Allopathic" school differed among themselves as widely in theory as they differed from Homeopaths, and the quarrels and diputes were as frequent and as violent among them as between them and Homeopaths, so that wherever two physicians were occupying the same locality there was always unfriendliness and recrimination, as in the days when Galen denounced his confreres as thieves and murderers!

I have stated that medical practice in the decade 1860-70 did not differ materially from what it was in the year 1800. The sum total of medical lore was then within the grasp of ordinary intelligence and it was possible for one person to constitute the entire faculty of such a medical school as that of Yale University for many years and so late as the year 1877 there were only eleven teachers in the faculty of Rush Medical college and the entire field of medicine was covered in a course of lectures of 20 weeks duration and all the lectures were attended by all the students who were not graded into classes.

The first text book on medical practice which I was required to read had been originally published 38 years earlier, and was as authoritative in 1874 as in 1836.

Physicians were not only general practitioners but were also "tooth-pullers" and as they drove about the country, in the saddle or in a two-wheeled sulky, carried with them their entire armamentarium, including tooth forceps, surgical dressings, pocket surgical case, (never sterilized), obstetric forceps, and a trunk of drugs. The drug equipment was mostly powders, such as Epsom salts, Calomel, Rhubarb, Dovers powders, Morphine, Quinine, Calomel & Jalap, and a few liquids such as Laudanum, spirits of Nitrous ether, and Chloroform. Thus equipped the physician might be called into any house along the roadside, and be prepared to give the required aid, either medical, surgical, dental or obstetrical.

Specialism had made but little headway up to the year 1880 and the spectacle of the Professor of Medicine in a great Medical college acting as chief surgeon to a great Railway, and the Profes-

sor of Physiology acting as surgeon and consulting surgeon on the staff of a very large County Hospital excited no comment because it was a common event.

Wisconsin has never lagged behind her sister States in any of the ordinary avocations of life and has not done so in the healing art. After the war between the States, a few returned military surgeons became specialists in this department, or at least emphasized that branch of their work. The late Drs. E. B. Wolcott and Solon Marks of Milwaukee were examples of this, the same is true of the late Dr. T. P. Russell of Oshkosh who nearly monopolized the surgical work in his section of the State. This was the beginning of specialties in this State, but until the days of antiseptics and aseptic surgery the field of surgery was so limited that almost any dexterous man might easily be an eminent and able internist and an equally able and skilful surgeon.

The new science of Bacteriology and Etiology laid the foundation of the new practice and development of Medicine. Pharmacology dissipated many of the therapeutic traditions of the past and this was greatly aided by Physiologic chemists. The development of Pharmacy did away with bulky and nauseating powders and boluses, and many fluid extracts and tinctures, and substituted for them active principles and alkaloids many of which can be agreeably administered in tablets or pills. Asepsis in the practice of surgery enormously extended the field of the surgeon and raised him to the dignity of a real specialist.

The rapid increase in knowledge in every science bearing upon the healing art has made it impossible for any one individual to cover the whole field so that specialties have multiplied here as elsewhere and now in every town in the State of any considerable size, the major specialties are practiced and hospitalization has gone on apace so that few towns of 5000 population are without some sort of a Hospital, either public or private.

It cannot be doubted that the opening of the medical schools in this State some 28 years ago contributed very much to raise the level of efficiency of practice, through the use of their laboratory facilities and the stimulus imparted to the medical practitioners by the presence of instructors and teachers in their midst. And inasmuch as the whole plan and scope of medical teaching and training had undergone such a complete revolution, recent graduates were enormously more efficient than formerly, and less dependent on their former teachers for aid, and thus the interval, between the most efficient and least efficient practitioners has been very greatly lessened, and this movement is still going on with increasing speed.

This same movement carried into practice, even in some of the smaller towns, has resulted throughout the State in a better understanding among physicians, in lessened jealousy, in less frequent quarrels, in co-operation in work, especially in the laboratory part of it, and finally in the group system which is now being worked out in many parts of the State in both large and small cities.

The problems involved in the group system of practice are still in process of solution and there appears no good reason to doubt that the system has come to stay, and that these problems will be successfully met. It would appear that this system ought to be, on the whole, most successful in towns of the smaller size, that is to say in towns of a population below five thousand and where there are only about half a dozen physicians. Here each man could work along lines most congenial to himself and in which he is most efficient, one member of the group could do the time consuming laboratory work and be on hand and available for emergencies and minor office patients.

Wisconsin is playing a leading part in the development of this important innovation in medical practice, which is bound to expand in many directions and, as experience with it accumulates, objectionable features are sure to be corrected.

The enormous accumulation of knowledge in those sciences bearing on medicine in the last forty years has made it an absolute impossibility for any one individual to gain more than a superficial acquaintance with them all, and has made it equally impossible for any one physician to become highly skilful and efficient in all departments of medical practice. The old-fashioned work of the family physician, therefore, is becoming more and more restricted, and is nearly limited to acute diseases, emergencies and ordinary obstetric practice. The major work is now being done here as elsewhere by trained specialists, either operative, diagnostic or therapeutic.

There is no one thing noticable at present, more in striking contrast with the past, than the proceedings in medical society meetings. Formerly we heard much of personal experiences, and many

a physician who had not lost a patient with typhoid fever in ten years talked of his experience as though he really had had experience, and actually believed that he had solved the problem of the proper treatment of that disease. In the case of Diphtheria the experience talks were probably more voluble and emphatic than in any other. And inasmuch as it was impossible for most of these individuals to forget their "experiences" it was impossible for them to learn anything.

A good many of us whose minds have not been too liberally endowed with resources for resisting the introduction of knowledge, have come to realize that the mere fact that a patient has survived the administration of certain drugs or methods of treatment is no evidence whatever that such survival was dependent on the treatment, but may in reality be an evidence of the capacity of the patient to overcome, not only his disease but also the effects of the treatment.

The questions now discussed in Medical meetings are scientific rather than practical, questions involving physiology, chemistry, etiology, diagnosis, laboratory technique, pharmacology, prophylaxis, and statistical investigations involving great numbers of cases, together with deductions warranted in the premises.

This change in the general character of medical society work has been accompanied by the development and growth of medical libraries. The movement began in 1886, then the "Clinical Club", now the Milwaukee Medical Society, acquired the library of the late Dr. J. K. Bartlett as a nucleus. This library now contains thousands of volumes of text books, bound journals, and pamphlets, in charge of a librarian, and open to, not only the practitioners of medicine, but to medical students who resort to it in ever increasing numbers. This library bids fair to rank very soon with the really great medical libraries of the country.

During the intervening time nearly all of the larger Hospitals in the State have acquired books in considerable numbers and many of them have quite pretentious libraries. The library of the School of Medicine of Marquette University, started within the last ten years, already contains upward of 4,000 volumes.

The growth of medical practice in Wisconsin has been accompanied by the development of research and clinical laboratories, and these are being resorted to with increasing freedom everywhere. It is possible that all this has had a tendency to increase the size of professional fees and that physicians are earning larger average incomes, but it has resulted in a very great gain to the people, in that it has very much reduced the average duration of illnesses and the unemployment incident thereto. The health activities of the City, Counties and the State have increased to a very great extent and every great employer of labor has a health or welfare department, so that morbidity and valetudinarianism is very greatly on the decline, and this movement has been very much aided and advanced by the work of such organizations, of an educational nature, as the Wisconsin Anti-tuberculosis Association and its branches and Auxiliaries.

While all these advances and improvements have been going on, it has been pointed out that there has been a gradually increasing Mortality in the State from such diseases as Cancer, Bright's disease, Arteriosclerosis, Diabetes, and Heart disease. This circumstance should not, however, be regarded as strange, for since all who are born into the world must die, it follows that those who do not die prematurely of the diseases incident to infancy, childhood, and youth, *must* die of the diseases incident to advanced life and old age, and since the average age of mankind is greatly increased and the number reaching old age is great, it follows that diseases of old age are, and of necessity must be, on the increase.

Wisconsin cannot be said to have been a pioneer in medical legislation for, while a medical practice act was passed in Illinois in the year, about, 1877, Wisconsin had no law except one which required a physician to have a medical degree issued by a legally incorporated medical school or in lieu of that must be a member of a legally incorporated medical society (passed about the year 1881) until 1897. Since 1897, this law has been amended from time to time until at the present date it is a fairly effective and adequate law, the law not only requires that the physician shall be a medical graduate, but that he must have been graduated by a medical school giving an approved course of instruction, and enforce adequate preliminary requirements and then the applicant for license to practice in the State must pass a satisfactory examination conducted by a State Board of Medical Examiners. The result of this medical practice act and its enforcement has been that there is a

great lessening in the number of quacks and mountebanks in the State, and medical imposture has been reduced to a minimum.

From this desultory view and sketch of medical practice in Wisconsin we may, I think, conclude that our State has played its part in the course of events in a praiseworthy and public spirited manner, that it has contributed in no small degree to the general advancement, both in the science and art of Medicine; is doing meritorious work in the present, and may be relied upon to continue the good work in the future, taking rank at least above the line of mediocrity.

THE AFTER-CARE IN TONSILLECTOMY.*

BY V. A. CHAPMAN, M. D.,

MILWAUKEE.

The operation of tonsillectomy, together with the indications and contraindications which should govern its employment, and the various instruments and methods devised for its performance, has been a popular subject for literature and discussion for many years.

During all this time little has been said about the care and treatment following the operation: and while it may be asserted that there is very little that can be said regarding this, I believe that there are some few things that can be done to add to the comfort of the patient, perhaps avoid some complications; and hasten recovery. I am taking it for granted that tonsillectomy is recognized as a major operation and should be in every way respected as such.

It is realized that the manner in which the operation itself is done, controls to great extent the result which will be obtained. Yet, the after care is worthy of close attention as it may have considerable bearing upon the ultimate results, and it most certainly does have a great deal to do with the comfort of the patient during the period of recovery.

It is not my belief that I can lay before you any great amount of new information in this matter. It is my belief, however, that enough valuable knowledge concerning this subject, gained by individual experiences, exists among the members of the profession to justify an attempt to get it assembled. This may be considered as such an attempt depending largely upon the discussion to bring out much that is worth while.

The care following the operation begins with the removal of the patient from the operating table. Unconscious patients taken from the operating room should not be placed on the back, without or with a pillow, and left to remain so during the period of recovery from the general anaesthetic. In this position there is increased danger of inspiration of bloody mucus and small clots. Bleeding may occur and is rarely detected until vomiting shows that the stomach has been filled with blood.

The pharyngeal reflexes are among the later to be abolished under general anaesthesia. Anaesthetists will confirm the statement that an appendectomy or amputation can be done without a movement by the patient under a degree of general anaesthesia which would not suffice for tonsillectomy. The mere placing of a tongue depressor upon the base of the tongue to expose the lower pole of the tonsil, will stimulate the reflexes more than the entrance of the scalpel into the wall of the abdomen. So also the pharyngeal reflexes are among the earliest to return following general anaesthesia: (if indeed they have been abolished during the operation,) and the presence of mucus or blood in the pharnyx will cause the act of swallowing long before return of consciousness. Blood in the throat, with the patient on the back is swallowed by the still unconscious patient before accumulation in the throat is enough to run from the mouth. Thus an unconscious patient lying on the back with bleeding into the throat will, if carefully watched, be seen to swallow repeatedly at regular intervals; the length of the intervals depending upon the rapidity of the bleeding. When the stomach becomes distended with blood it will usually be emptied by vomiting; only to be filled again if the patient is kept upon the back.

In all cases where the operation has been done under general anaesthesia, the patient's head should be kept low when the patient is removed from the table; and when placed upon the cart, the prone position is much better than the supine.

Children should *not* be gathered up into the arms and doubled up like a jack knife head upwards.

With the patient lying upon abdomen and chest with face turned to one side, drainage from

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the throat and mouth and from the nose (if adenoidectomy has been done) is promoted; less blood or bloody mucous enters the stomach and there is less danger of their inspiration. This same position should be maintained in bed; and if the bed has sagging springs, it is well to place a pillow under the patient at abdomen. The patient's face should be turned towards the side of the bed at which the nurse is in attendance. I believe that constant bedside attendance by the nurse, until recovery from the anaesthetic, should be insisted upon. Along with other duties, she must see that the patient's face does not become buried in the bedding to such extent that possible suffocation might ensue. No pillow should be under the patient's head, but a pad of absorbent gauze should be placed under the side of the face to take care of drainage from the mouth. This should be frequently changed; which can be readily done without disturbing the patient. The pus basin here is not as suitable as the gauze—a good sized pus basin should be at the bedside, however, for immediate use if vomiting occurs.

The position in bed which I have described, applies to patients who are under general anaesthesia and applies in such cases until recovery from the anaesthetic.

When the operation has been done under local anaesthesia, these remarks do not bear so importantly upon the situation; although I believe that the prone position in bed for the first hour following the operation under local anaesthesia is sometimes much more comfortable for the patient than any other position.

After the first hour and sometimes immediately following the operation under local anathesia, and after recovery following general anaesthesia, the patient is much more comfortable when sitting up in bed against the back rest. Following recovery from general anaesthesia this position should be delayed and attained by degrees, and to not as great extent. Nausea is prompted by the upright position early and the patient is likely to be faint. The operated patient should not be expected to do much talking during the first 36 hours. Only such questions should be put to the patient as may be readily answered by a positive or negative movement of the head or a simple gesture.

There is no other one measure that can be employed with as satisfactory results in the first twenty-four hours following tonsillectomy as the icebag. Early and continuous application of cold externally for the first twenty-four hours, and occasionally after that, gives great comfort to the patient; prevents a large amount of oedema of the faucial mucous membranes which would otherwise occur, and shortens the period to recovery.

This is a matter which requires some closer attention by the surgeon than simply writing orders for icebag to the throat. Icebags should not be so thickly wrapped with towels that the cold cannot be utilized. If it is felt that the rubber should not touch the skin, a couple folds of gauze is sufficient protection.

To be most effective, the cold should be applied to each side of the neck, well up under the angle of the jaw. This requires that two small icebags be employed, one on either side of the neck; and it is with difficulty that these are kept in position.

The icebag fashioned after the manner of a collar which fits about the neck is widely used but is a poor contrivance for this purpose. It slips down and applies the cold at about the intraclavicular notch. After a long, futile search to find an ice bag of suitable construction for use after tonsillectomy, I gave up the idea of finding it and had one made according to my own idea and have found it to be much more satisfactory than any ice bag I could find in the market. It is made from a piece of the inner tube of automobile tire. The piece of tubing about 26 inches long is sealed at both ends by vulcanizing. The opening, rather large, with screw cap, is placed at the middle of the bag. The ice, rather finely crushed, is placed in the bag to fill about four inches of the space in each end. Then with the patient sitting up against back rest, the ice bag is laid over the top of the head with the dependent ends containing the ice resting against each side of the neck well up under the jaw and so retained by tapes, one from each dependent end, crossed and tied over the top of patient's head. Another good feature about this bag is that it does not leak at the cap when in use for the simple reason that the cap is away above the water-line.

Cracked ice in the mouth is sometimes of relief to the patient and may help to lessen the oedema of the mucous membranes. The objection is that it increases the frequency of the act of swallowing which is usually painful. I believe that heat externally is better than the ice bags after the first forty-eight hours, employed in cases when stiff-

ness of the neck muscles occur or with pain radiating to the ear.

Asetylsalicylic acid internally the first evening following the operation, and occasionally later, seems to relax painful tension of the throat and promote comfort. Orthoform on gauze pack in each tonsil fossa is said to control pain completely. I have not tried it. It has always seemed to me that the more freely open the tonsil fossa is kept and the less it is unnecessarily disturbed after operation, the better it is for all concerned.

Gargles are not of much use during the first twenty-four hours: and after that are of value as a cleansing agent. There is ordinarily no reason why a gargle of unpleasant taste should be prescribed. The mouth and teeth should, of course, be kept clean. Like all open wounds which heal by granulation, a crust forms over the uncovered surface left by tonsillectomy. On external surfaces it quickly becomes dry and remains until it separates from a healed surface. In the throat the conditions are such that the crust takes the form of a comparatively white coagulation necrosis membrane of varying thickness, portions of which come away at times. The presence of this soft crust is necessary for the protection of the healing surface. Sometimes, however, it becomes very thick and foul. Then a gargle of Hydrogen Dioxid in water occasionally is of advantage in clearing away some of this excess broken down crust. In connection with the observation of this membrane, especially in the presence of symptoms of systemic disturbance, one should remember the possibility of the presence of diphtheria.

A carefully kept hospital chart, frequently consulted, is a good thing well used following tonsillectomy as well as any other major operation.

Sutures, excepting those used for the surface ligation of vessels deep in the fossa, should be removed by the end of the second or third day, if they are of any material which will not be absorbed or dissolved by the secretion in that length of time. If left in place longer than that, they will cut their way out through the tissues; thus causing additional wounded surface with consequent additional scar tissue. The necessity of removing sutures with its additional annoyance to the patient would be avoided if only absorbable suture material is used at the operation. Something which can be done in the way of after care or treatment that will lessen the amount of resultant scar tissue, which is sometimes greater than desired, will be welcomed.

I have thought that injections of Thiosinamin into the later cicatricial tissue might be of benefit. I do not know whether or not this has been tried.

The matter of diet during the earlier days following tonsillectomy, I have not satisfactorily learned.

That it must be liquid for a time is beyond question; but whether it should be hot or cold, whether is should include acid fruit juices or not is doubtful. It has seemed to me that during the first twenty-four hours very cold drinks are most easily taken. Children like ice cream. After the first twenty-four hours, the liquids are most easily swallowed when hot.

It is not the purpose of this paper to cover the possible complications arising after tonsillectomy. But it is permissable to say something concerning hemorrhage; and more particularly concerning continued bleeding in contradistinction to secondary hemorrhage. Properly speaking, the expression secondary hemorrhage cannot be applied to bleeding following tonsillectomy unless it occurs hours after the operation and after all bleeding has ceased following the operation and recovery from the anaesthetic. Secondary hemorrhage is, I believe, comparatively of rare occurrence. I have seen two cases in which secondary hemorrhage occurred at about five days in one and in the other as late as ten days, following the operation.

Continued hemorrhage, however, is not as rare and properly comes under the period of immediate after treatment, more or less within the first twenty-four hours. Persistent bleeding during this period is caused in most instances by one of two existing local conditions and possibly by both. One of these is the presence of a remaining portion of tonsil tissue; usually of the base of the tonsil or of the upper pole: possibly the lower. Bleeding in these unfortunate cases is very persistent from the remnant and is most satisfactorily ended by removal of the offending stump which even at so early a period following the operation manifests its pernicious ability as a trouble-maker.

The other cause of persistent continued bleed-

ing is the formation of a clot in the tonsillar fossa which does not occlude the open end of the bleeding vessel. This bleeding vessel is usually a small one deep in the recess of the fossa. These instances of protracted bleeding occur, contrarily enough, in the cases where the operative results have been most admirable. Enucleation has been complete and clean with resultant deep clean fossa and firm uninjured pillars and plica. A blood clot forms in the fossa outside the opening of the bleeding vessel which it does not occlude; and is retained by the pillars. The bleeding continues behind this clot with blood escaping between the clot and the walls of the fossa. The clot effectually protects the bleeding area from contact with the air and keeps it moist and warm and the bleeding continues. The clot enlarges in size by addition to the outer three-fourths of its surface thus putting the pillars more and more on the stretch without effectual pressure against the bleeding point deep in the fossa. Pain and distress to the patient increases with the size of the clot to great intensity. The only effectual procedure is to clear out the clot thoroughly; I wish to emphasize the word *thoroughly* because if this is done in a half hearted manner it is of no use. The clearing out of this clot can be done by the finger if no suitable scoop or other instrument is at hand. The handle of a large tablespoon is a handy instrument that is not to be scorned for this purpose. Bleeding will frequently cease with the clearing away of this clot. If it does not cease, the necessary measures must be taken to close the bleeding point. Often the simple application of a sponge saturated with Hydrogen dioxide immediately repeated a couple of times will suffice. Hydrogen dioxide is a very good and too little used agent for the checking of hemorrhage in nose and throat bleeding. It is readily obtainable; can be used freely, and its faculty of causing effervescence in the presence of blood is effective when it reaches the mouth of a bleeding small vessel. An agent which is of great help in checking bleeding in the throat and other mucous membrane areas is atropin used hypodermatically. Bleeding from small vessels, very persistent in the presence of mucous or salivary secretions, frequently ceases when these secretions are checked by the use of atropin.

It seems to me that it is better to first try some of these simple methods rather than to resort immediately and perhaps unnecessarily to the more heroic measures for checking hemorrhage.

A Biologic Study of Latency in Syphilis. By Marvin F. Engman, M. D., and Frederick Eberson, Ph. D. *Archives of Dermatology and Syphilology.* Vol. 3, No. 4, April, 1921.

The studies here reported were taken from the Dermatological Departments of the Barnard Free Skin and Cancer Hospital and the School of Medicine, Washington University, under a grant from the United States Interdepartmental Social Hygiene Board.

From their work, the authors found that the blood and other body fluids excepting semen, are not infectious in latent syphilis, or if so, rarely.

Incubation of blood from latent syphilitics did not favor any infectious property which might have existed.

The groups studied were composed of untreated patients as well as those who received no treatment within the past two years.

Of the total of 500 cases of syphilis, 75 or 15 per cent were definitely latent.

These investigations demonstrate the fact that those who give a history of syphilis infection may harbor active virulent spirochetes for years, and this in the face of irregular negative Wassermann reaction or slight reaction in the cholesterin antigen only.

GASTRIC SYMPTOMS.

Of 1,000 patients seen by John M. Blackford, Seattle (*Journal A. M. A.*, Oct. 29, 1921) and his associates, 14 per cent actually had organic gastric disease. The roentgenologic examination determined these cases accurately and with a very small percentage of error. Thirty-four per cent showed abdominal extragastric disease giving reflex stomach disturbance. Inflammations of the gallbladder apparently caused more stomach disturbance than any other organic abdominal lesion. Eighteen per cent presented themselves for diagnosis of stomach trouble, which, investigation showed, was due to demonstrable systemic disease. Twenty-five per cent presented no objective pathologic condition. Their complaints were considered secondary to habits of living, type of individual, or to chronic debility. One-third of all cases in which operation was previously performed fell into the functional group. Six per cent of all cases remained undiagnosed. Thirteen per cent, or more, of patients complaining of chronic stomach trouble had lost the appendix before coming to the clinic. Ten per cent of all women in this series had had previous pelvic operations, one-half done on frankly neurasthenic individuals.

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EDITORIALS

YOUR "COMPETITOR".

DON'T hate your competitor, hate is expensive. Get acquainted with him. You may learn something. Don't knock your competitor. It sounds bad and is bad. Be a good sport. Play the game. If your competitor lies about you, or uses underhand methods to harm you, don't worry. He is cutting off his nose to spite his own face. He cannot fool all the people all the time. Straight business and good nature win out always in the long run. Your competitor will do you a great deal of good if you keep your eyes open. He will keep you from slumping. He will make you energetic, careful, more attentive to business and altogether will be a good tonic for you, if you know how to use him.—Dr. Frank Crane.

PUBLIC HEALTH CLINICS.

WE occasionally hear from members of the profession criticism of our Public Health Clinics. The public health clinic has become a necessity and is undoubtedly here to stay. That abuses easily creep into its administration cannot be denied. It has been our observation, however, that much of the criticism is ill founded and the critic has not taken pains to investigate the subject. We also believe these agencies have welcomed constructive criticism and have made every effort to right any abuses called to their attention.

If danger to the practitioner exists in these agencies, it will be best met by showing an interest in these movements, taking a hand in their activities and shaping their development. If the profession continues to stand back and leave this work to the layman, how in the name of common sense can the physician expect the public health clinic—a distinctly medical problem—to develop to either his or the public's advantage.

As a profession, let us get familiar with what is being done, what is contemplated, what should be done, and then take a hand in the doing of it. There has been too much of the "Let George Do It" spirit and too much unintelligent criticism. The individual physician and the county medical society should wake up and take the leadership which is rightfully theirs.

POSTGRADUATE STUDY IN OBSTETRICS.

CHILDBIRTH is as old as the race, but Mauriceau who lived in Paris at the end of the seventeenth century is said to be the first physician who devoted himself exclusively to the study and practice of obstetrics. William Hunter was the first physician to confine a Queen of England.

The obstetric art was in the hands of women until the middle of the sixteenth century. Medical men had nothing to do with normal cases and were not called in the difficult ones until after the child was dead. In 1522 Dr. Wertt of Hamburg was burned alive for having dressed as a woman to attend and study a case of normal labor.

During the past few centuries the care of women in childbed has been gradually transferred from the practical midwife of the community to the family physician. The early benefits of this transfer is apparent from the lower mortality shown in the following table.

Average number of mothers dying in childbed in London.

For 20 years ending in 1680, one in every 44 delivered.

For 20 years ending in 1700, one in every 56 delivered.

For 20 years ending in 1720, one in every 69 delivered.

For 20 years ending in 1740, one in every 71 delivered.

For 20 years ending in 1760, one in every 77 delivered.

For 20 years ending in 1780, one in every 82 delivered.

For 20 years ending in 1800, one in every 110 delivered.

For 20 years ending in 1820, one in every 107 delivered.

In 1840, one woman died in childbed for every 168 women delivered in England and Wales. But in the birth registration area of the United States, one woman died, in 1915, for every 164 live births.

The University of Pennsylvania established the first course of obstetrics required for graduation in an American medical college in 1813. Harvard did not have a department of obstetrics until 1915. For a century some obstetrics has been taught in all medical schools. It is generally admitted that the clinical teaching of this important subject has been most inadequate. Mortality records indicate that the physician of today, skilled as he is in medicine and surgery, loses as many women from childbirth as did his predecessor of the early nineteenth century.

The practical midwife is rapidly being eliminated. During the past ten years the number of midwife deliveries in Milwaukee has dropped from 4198 in 1911, to 1988 in 1920. The number of confinements conducted by physicians has for the same period increased from 6689 to 9088. If in the future there is not a further lowering of the mortality and morbidity from childbirth, physicians must take the blame. For all women of childbearing age (15 to 45) childbirth is the second greatest cause of death. The records of life insurance companies show that for all women insured before the age of 45, the diseases of pregnancy and the puerperal state are the second greatest cause of death. All women are exposed to tuberculosis or it could not hold its lead over childbirth as a source of danger to the younger women.

The maternal and fetal morbidity and mortality of today are too high when compared with surgical records of the past half century. It is generally admitted that present conditions may be improved by dissemination and application of our present knowledge of obstetrics. The clinical teaching of obstetrics must be improved.

The Extension Division of the University of Wisconsin is offering special courses in clinical obstetrics to aid the Medical Profession of the State of Wisconsin in their effort to permanently lower the present high fetal and maternal mortality rates. These courses are a part of the work instituted at the request of the House of Delegates of this association. They are illustrated with motion pictures taken in Austrian, English and American clinics and are available for county societies now. Correspondence should be directed to the secretary of the State Society.

POWER OF ORGANIZATION.

SOME students at Princeton were discussing the need and the probable effectiveness of a new students' organization, says Everybody's Magazine, when Tom, who had just returned from

his summer vacation related the following experiences on his father's plantation:

Finding Rastus ready to go to town with a load of produce, Tom joined him. Now Rastus was a good driver, expert with the whip and somewhat of a philosopher. On the way to town a large horsefly lit on the ear of one of the leaders of the four-mule team. Rastus cracked his whip and killed it. As they rode along he killed a bee on the petal of a rose in the same manner.

Tom, surprised, saw a tree growing over the road, on a branch of which was a hornet's nest. "As we go by, Rastus, hit that," said Tom, pointing to the nest. Rastus paid no attention to the request nor the nest. 'Why didn't you hit it, Rastus? asked Tom. After a pause and a fierce look, Rastus replied: "No, sir; that's organized."

That there is need for organization in the ranks of the medical profession goes without question. That the physician of today does not hold the high place in the esteem of his clientele that the family doctor of old did is generally admitted. The reason for this is, that the members of the medical profession have been leading an individualistic existence. Each has built around himself a wall of self-sufficiency. This isolation has engendered jealousy with its concomitant evils, with the results of which every one of us is only too well acquainted.

When we, as physicians, respect our fellows; when we cease to strive for our own glory and aggrandizement at the expense of our brother physician; when we realize that every time we speak disparagingly or slightingly about another physician we are injuring the cause of medicine and are only forging weapons against ourselves; when we realize that our own good is so intimately bound up with the good of the profession as a whole so as to be inseparable;—then will we as physicians be accorded that esteem and respect that should be ours.

Through the mutual contact at our monthly meetings the barriers of isolation are broken down, the wall of self-sufficiency crumbles and the last vestige of jealousy vanishes. Thus the cause of medicine is advanced. If any dark, unsanitary nooks or corners, prejudicial to the good of the profession, exist, the regular meeting affords the opportunity to let in the light and sunshine. When every one of us is activated by the best motives toward our fellow physician; when our slogan is "One for all and all for one," our enemies will hesitate to attack us. They will say as Rastus did about the hornet's nest. "No, sir, that's organized."

To the existence of a strong effective organization, three requisites are essential. The first of these is honesty on the part of the members. The second is a cause worthy of one's best efforts. The third requirement is unswerving loyalty.

Think it over.—*The Madison County* (Ill.) *Doctor.*

AS OTHERS SEE US.

(*Editorials from the Lay Press.*)

SCIENCE AND PRACTICE.

Dr. John B. Deaver delivered a two-fisted attack on "medical foundations" in his address before the Philadelphia convention of the American College of Surgeons, of which he is the president. Defending the theory "that science is the beginning of practice and practice the beginning of science," he built his criticism of full-time salaried teachers on the general argument that the actual practice of medicine is absolutely essential to equip a person for teaching medicine and surgery.

Dr. Deaver directed his broadsides at "medical foundations" established by men of wealth, in the following words:

"By some astounding audacity these same men seek by some metamorphosis to change a young fledgling, sheltered, nursed and surrounded by every protection, to be an example of super-intelligence that shall astonish the world. The plan set forth by these gentlemen shows no appreciation of the knowledge, the ability, the aptitude and the hard work of men who have made the conquests of medical science possible."

Most laymen will be inclined to agree with Dr. Deaver's point that there is a very direct relation between practice and science if the teaching of medicine and surgery is to be regarded as an expression of accumulated wisdom. It is so in other professions; it is so in the trades. It may be an old-fashioned theory, but most people believe that experience is a great teacher. Of course, there may have been notable exceptions to this rule, but it is easy to agree with Dr. Deaver that the best

teachers are those who know more than they learned from books.—*The Milwaukee Sentinel.*

HOSPITALS.

Hospitals are distinctly a product of Christianity. They were instituted originally to care for the sick and suffering who were unable to pay for such services as they needed. The pre-Christian idea on this subject may be summed up in saying that it was thought that folks not rich enough or powerful enough to command private attention from physicians and nurses and servants were not of enough importance for it to matter how much they suffered or how soon they died.

Through the development of Christian civilization, it has now come about, not only that the poorest people can enjoy the best medical attention and the best care, but that a degree of care and attention practically impossible in the private home can be furnished to the well-to-do also, who find it a matter of economy, as well as otherwise desirable, to pay for hospital service instead of remaining at home.

It is a good test both of the Christianity of any community and of the degree of its civilization to see to what extent and to what manner hospitals are supported. Owing to the service which the modern hospital gives, the demand for hospital accommodations always tends to be in excess of the supply. There is always a need for increased facilities.

And, owing to the patronage of hospitals by more and more of the class of people able and willing to pay for the services rendered, the hospital of today is to a much smaller extent an institution of direct charity than was formerly the case. Many hospitals, in spite of giving free services and free accommodations to those needing them, are able to conduct their affairs on a sound business basis. The support of hospitals is still a creditable and desirable form of charity but it is no longer wholly that. It is the best kind of business sense for any community to provide the means for adequate hospital facilities.—*Wausau Record-Herald.*

CHRISTMAS SEALS.

In 1908, when the Wisconsin Anti-Tuberculosis Association was organized, the death rate in this state from tuberculosis was 107.7 per 100,000 of population. In 1920 the death rate was 84.2 per 100,000.

That tells in a nutshell the story of Wisconsin's fight against the white plague, directed and carried on by the association.

But it does not give the detail of the battle that has been waged. That story is a long and interesting one. It includes the establishment of traveling clinics; the work of hunting out in various communities the tuberculosis cases and those individuals predisposed to the disease; the follow up work after examination has disclosed the necessity for care and treatment; the training courses for public health nurses; arousing the city and county authorities to the need for such nurses; instituting and maintaining consultation bureau service for individual consumptives, nurses, welfare organizations, public officials, doctors and others; establishing sanatoria for the care of tuberculous persons and many other beneficent activities, all of which have contributed to the remarkable reduction of the death rate.

And, perhaps most important of all, it concerns the constant campaign of education, of which the other features are a part, which the association has carried on and which has awakened hundreds and thousands of incipient consumptives to a sense of their danger and led them to take precautions by which the disease has been arrested and their lives saved to their families and the community.

This work has been principally, if not entirely financed by the sale of Christmas seals, an annual event which has become an established feature of the holiday season. The sale of the seals this year will enable the association, not only to continue and extend the activities it has already established, but to accomplish some new and excellent plans it has in view.

It seems necessary to do no more than to call attention to the fact that the seals are on sale to insure a result which shall gratify the hopes and expectations of the association in full measure and enable it to proceed uninterruptedly with its campaign.—*The Milwaukee Sentinel.*

MEDICINE IS THE MOST UNDERPAID AND OVERWORKED.

Some time back the Johns Hopkins Hospital trustees named $1,000 as the maximum fee that

ought to be charged for any operation. The public at large immediately jumped to the conclusion that over-charging by doctors was common throughout the country and that all fashionable practitioners were being censured.

Now, nothing could be more untrue. The medical scamp, the quack, the selfish money seeker has been wellnigh driven from the ranks of the profession. Taken by and large, medicine is today the least commercialized, the most overworked, and the most underpaid of the essential skilled professions — excepting only teaching and the ministry.

Nor are we inclined to cavil at the rather common practice of 'charging what the traffic will bear." Fees cannot be standardized, and there is ample ethical justification for charging Mr. Moneybags $5,000 to yank out his appendix if thereby Dr. Soakum is given leisure to operate for nothing on a dozen tenement-house children in the clinic.

Hands off the doctors, for they are not of the profiteer class. And even the big chargers never get their bills paid until the last — until the butcher, the baker, and the garage man have got theirs.—*The Milwaukee Journal.*

THE JOURNAL CLINIC

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THE TREATMENT OF CENTRAL NERVOUS SYSTEM SYPHILIS WITH A NEW ARSENICAL.

October Meeting of the University of Wisconsin Medical Society.

BY WM. F. LORENZ, M. D.,

Dr. Lorenz introduced his subject with a statement of the plan on which the work had been arranged, namely, under the Interdepartmental Research Board, Psychiatric Division. He then outlined central nervous system syphilis dividing it into two general groups, the acute meningo-vascular and the chronic or parenchymatous forms. The latter includes paresis and tabes. It is probable that these two forms blend histologically and it is well known that clinically the headaches, dizziness, pains, and local transient palsies of the meningo-vascular form may precede the development of a true parenchymatous form. From the therapeutic standpoint it must be appreciated that the parenchymatous form of central nervous system lues presupposes an actual ganglion cell involvement or destruction and hence no possible restoration of function from treatment. It is, therefore, obviously imperative to diagnose and treat before this stage.

The result of treatment is with difficulty followed on the basis of clinical manifestations, since there is a mixture of symptoms in most cases and the measurement of mental disturbances is apt to be most unreliable. In this study the laboratory examinations have served as a check on the progress under treatment. Wasserman reactions on the blood and spinal fluid, lymphatic or other cellular increases in the spinal fluid, globular excess and the colloidal gold (Lange) reaction have been used as measures of improvement in the treated group.

Forty-one cases, largely paretics, have so far been treated with the new arsenical, A-63, and, of these, twenty have shown marked improvement by laboratory standards, eighteen of this group showing definite clinical improvement (eight much more improved than under any form of treatment previously applied by Dr. Lorenz).

To impress the pathologic picture of syphilis of the central nervous system a series of specimens were demonstrated by slides and some time was spent in the discussion of the newer refinement of the Wassermann reaction through the medium of three different units of complement applied in the usual series. To impress the importance of laboratory data in the diagnosis and prognosis in treatment of central nervous system syphilis, Dr. Lorenz gave the following table:

	Paresis	Tabes	Meningitis
Blood Wassermann ...	100	75	100
Cerebro-spinal fluid..... Wassermann ...	100 in 0.2 c.c.	90% 0.2 c.c.	95% in 1 c.c.
Cells	30-70	20-30	0-250
Globulin	+	+	+ —
Gold sol.....	5555532100	3443210000	0023421000

Dr. Hodges discussed the field work and emphasized the three following points:

1. That improvement as measured by the development of the negative Wassermann (blood) was easier of accomplishment by A-63 than any other arsenical.

2. The accuracy of control of the results made the study a particular pleasure and although the results were not uniformly permanent, the more accurate laboratory methods served as a check or indication for further treatment.

3. There was a distinct absence of extreme toxic effects noted in the use of the more common arsenicals, salvarsan and neosalvarsan.

There have been no cases of jaundice nor were localized necrosis remarked if a leak occurred about the point of injection into the vein. In two cases blindness resulted but so far it has been impossible to determine definitely the effect of the drug in this relation. Since accurate ophthalmoscopic examinations were made before all injections of A-63, changes in the nerve head were noted in at least one of these cases prior to the use of the drug. However, the frequency of blurring of vision or other ocular disturbances makes this an important point in thoroughly controlling the drug before it is turned over to the profession at large for more or less indiscriminate use.

Dr. Loevenhart next discussed the drug from a pharmacologic standpoint. He stated that it was one of the preparations which had been turned over to the Interdepartmental Research Board by Brown and Pearce of Rockefeller Institute, and furthermore that it had been patented by the Institute to prevent infringement on its manufacture and use. He demonstrated the graphic formulas for A-63 as compared with salvarsan (arsphenamine) showing that because of the difference in valence there was less arsenic available than in 606.

He added that five grain doses were easily soluble and the patient receiving so large a dose was free from reaction. Retinal changes were given as contraindications for any type of arsenic, but particularly for an arsenic of this group apparently. Dimness of vision was a common reaction on administration of A-63 in normal retina. Although this was only transient it marks a definite variation from the results with 606. Dr. Loevenhart remarked that certain toxic effects had been noted both in experimental animals and human beings receiving the drug, and concluded by stating that it was the form of arsenic and not the amount which determined the results in the treatment of syphilis.

Dr. Bradley discussed the method of elimination of the drug and stated that most of the arsenic appeared in the urine in the first twenty-four hours, that is to say, 80 to 90 per cent of the dose administered. After this primary rapid elimination there is a very slow evenly maintained level for as long as fifteen days. The concentration of arsenic in the blood was as high as .03 of a milligram per c.c. on the second day, on the fourth day rapidly dropping to .005 of a milligram. It was interesting to note that in parallel studies of the spinal fluid and the urine as high as .02 of a milligram per c.c. of spinal fluid was determined two hours after the injection at the same time the urine showed 2.5 milligrams per c.c. Parallel blood and spinal fluid studies have proven that a comparable concentration of arsenic in the spinal fluid to that in the blood as early as three hours after the administration. Of course, Dr. Bradley added that allowance must be made for individual variation.

The symposium on the new arsenical was discussed by Drs. Blanton, R. H. Jackson, Dwight, Loevenhart, and Middleton.

ST. JOSEPH'S (MILWAUKEE) MONTHLY CLINIC FOR PHYSICIANS.

CONTRIBUTED BY DRS. STRATTON, ECHOLS, AND JERMAIN.

DR. CHESTER M. ECHOLS.

CASE I. Large Ovarian Cyst.

This operation promises to be of interest chiefly because of the great size of the abdominal tumor which brings the patient to the hospital. She has the appearance of being pregnant at full term.

History: Mrs. F. K., age 42, white, married. Parents both living and well. Measles and scarlet fever in childhood. Severe attack of pneumonia 7 yrs. ago. Never had any serious injury nor any surgical operation. Menstruated at 13. Married at 20. Had 10 children, 7 of whom are living. No miscarriages. Normal deliveries. Youngest child born 4 yrs. ago.

Present Complaint: Six months ago patient first noticed an enlargement of the abdomen which has grown rapidly ever since. No menstrual periods were missed; they continued normal in every respect. Her general health has not become impaired in the least, except that for the past two months the great size and weight of the abdomen have diminished her working capacity. Otherwise, no pains nor constitutional symptoms.

Physical Findings: Well-developed and nourished, powerfully built, robust woman of 42. Head, neck, and special sense organs negative. Heart and lungs normal. Abdomen symmetrically distended to enormous size. No bulging of flanks. Distinct fluctuation present. No tender areas nor hard lumps palpable. No

hernia. Vaginal exam. shows perineum well preserved. Cervix lacerated but of normal consistency. Upper limits of uterus cannot be made out by bimanual exam. Blood pressure 170-115.

Tumors of this size are not common in our clinics nowadays. Pictures in the old text books of an emaciated woman with a lap full of belly are familiar to you all. It speaks well for the medical profession that cysts are rarely allowed to attain such mammoth proportions.

In the patient before us you will readily eliminate pregnancy from what you have heard of the history. Inspection and examination of the patient in different postures enables us to exclude ascites. There is no bulging in the flanks as the patient lies on her back. The fluid has all the signs of being encapsulated. It is logical to conclude, therefore, that we are dealing with an ovarian cyst of large size and rapid growth. Is there a fibroid tumor of the uterus present also? From physical examination alone it is not possible to exclude fibroid. If any such tumors are present they are not definitely palpable, nor have they caused any menstrual disorder.

In a woman past 40 any abdominal tumor developing as rapidly as this one should suggest the possibility of malignancy. Malignant papillomas of the ovaries are prone to produce a large amount of serous exudate in the peritoneal cavity. In this patient there are no signs of free fluid in the abdomen. Moreover, she has shown no cachexia, anemia, or loss of weight.

You will recall from the above history that she says the tumor first made its appearance within the past six months. Considering her social status, we must not take her statement too seriously as to when the tumor first appeared. She is an illiterate, hard-working woman, the wife of a saloon-keeper. She habitually goes without a corset. Women of her class and environment are usually not close observers in matters pertaining to their health or physical well being. The fact that she suddenly ceased child-bearing 4 years ago at the age of 38 suggests that this tumor is of greater age than six months.

I make a comparatively short median incision, as you see, for exploratory purposes. Through this incision we note that the cyst is thin walled and free from adhesions. By means of this very large trochar we proceed to evacuate the contents (about three gallons). The empty cyst can now be dragged through our short incision and its pesicle amputated. We now are able to see that the cyst originated from the right ovary.

You will note that the uterus is of practically normal size and consistency and is free from tumors.

Palpating the gall-bladder through our original incision I find a large solitary stone. The gall-bladder itself is free from adhesions. Holding the gall-stone against the anterior parietal wall, I make wound directly over it. Stretching the stab wound with a forceps, the gall-badder is delivered through the narrow wound where we can easily open it and remove the stone. This makes a minor operation of the cholecystotomy, which adds no appreciable risk to the main operation.

NOTE: Patient left hospital in good condition two weeks after operation.

DR. F. A. STRATTON.

CASE I.

The first patient I desire to exhibit this morning is a man (E. W.) age 55, who was sent to St. Joseph's hospital five months ago by Dr. A. J. Brah of this city. He gave the following history:

He is a baker by occupation. His family history has no bearing upon the case. On the morning of his entrance to the hospital, he lifted a pan of dough from a shelf in the icebox, on about a level with his shoulders. He states that the pan weighed about 15 pounds. He felt a sudden pain in his right shoulder joint causing him to drop the pan. After this the arm felt somewhat weak, but the pain did not persist, and he felt no marked disability. However, he thought it advisable to see a physician and went to one of the hospitals in the city, where he was examined and informed that there was nothing the matter with his arm. He thereupon went to Dr. Brah, who made a diagnosis of the condition and brought him to St. Joseph's Hospital. Examination at this time, by Dr. Brah and myself, revealed a muscular appearing man with nothing abnormal upon physical examination except a bunching of the outer portion of the biceps at its lower extremity, more pronounced upon attempting to flex the arm. He states that the arm felt weak when attempting flexion. The inner portion of the biceps was apparently normal. There was very slight, if any, swelling; no ecchymosis; and very little pain at this time.

I agreed with the diagnosis of Dr. Brah, that there was a rupture of the tendon of the long head of the biceps. Operation was advised. An incision was made exposing the upper end of the outer half of the muscle. Upon opening the sheath a small amount of blood clot was removed, and the tendon of the long head was found coiled up with the sheath. Excision was extended exposing the

head of the humerus where it was found that the tendon had ruptured within the groove in the head of the bone. The end of the tendon had a frayed out appearance. It appeared impossible to suture the tendon in its normal position with any degree of security, therefore it was sutured to the tendon of the short head just below its origin at the coracoid process. The wound was closed and the arm immobilized on a right angle splint. It was removed at the end of four weeks, and gentle passive motion instituted. You will observe that there seems to be no impairment of the function of the arm, as far as motion is concerned. Of course, the man has been careful not to put any great strain upon the muscle. I do not believe that there will be any serious impairment of the function of this arm. This is a rather unusual case, as it generally requires a considerable force to rupture this strong tendon. It is said by some writers that rupture of this tendon may occur as a result of an osteo-arthritis, the tendon being thinned out by the pressure of new bone formation. Such was not the case in this individual.

CASE II.

The next patient is a boy, 13 years of age, admitted to the hospital 16 days ago with a peculiar injury. He was brought to the hospital by Dr. Perrin, of Menominee Falls. The boy had fallen from the back of a cow upon which he was practicing some rough rider stunts, striking upon his left hand with the arm in hyper-extension, causing a compound dislocation of the elbow joint. When the dressing was removed at the hospital, there was a laceration on the anterior surface at the bend of the elbow, through which projected the condyles, and about 2 inches of the lower end of the humerus. There was no fracture. The lower end of the humerus had passed through his shirt, a piece of which was still stretched around the end of the bone. The vessels and nerves were uninjured; lower end of the biceps had been torn across. The cephalic vein was also torn, and there had been considerable hemorrhage. The dislocation was reduced, and the capsule and other structures closed up leaving a small catheter secured within the joint. Irrigations with Dakin's solution were immediately instituted, and gentle passive motion begun the following day. The wound, as you see, is now almost healed. There is more motion in the joint than one would expect. I feel that there will be very little disability in spite of this unusual and serious injury.

CASE III.

A female patient 57 years of age, was admitted to Notre Dame Convent infirmary in January, 1921, complaining of weakness, loss of strength, anorexia, and excessive thirst. It was found that she had a temperature ranging from normal in the a. m. to 101 or 102 in the p. m. She claimed to have lost about 20 pounds in weight. She had always been well previous to her present illness, except for some childhood diseases, and had worked for many years as a teacher. She had never had any serious stomach trouble, except for rare attacks of fullness after eating.

Physical examination showed a large female, who presented the appearance of having lost weight.

Color: Fair.

Eyes: Pupils react to light and accommodation.

Nose and Throat: Normal.

Chest: Expansion fair and equal. No lagging. Percussion note normal throughout. Upon auscultation no rales or friction rubs.

Heart: Borders normal. No murmurs. No accentuated sounds.

Abdomen: Contour normal. No Palpable tumors. No rigidity or tenderness.

Extremities: Normal.

Reflexes: Normal.

Urine: Contained no abnormal elements.

Blood: White cells 10,000, 70% Polys. Reds 4,500,000. Hemoglobin 70%.

Patient was put to bed on a semi-solid diet, and kept there for about three weeks, at which time the temperature had been normal for over a week, and her appetite had improved. She was sent to the country to recuperate. She was seen there in July by Dr. Lettenberger, who made a careful examination and discovered a diffuse mass in the right hypochondrium extending well to the epigastrium. About ten days later she was seen by Drs. Lettenberger and Stratton at St. Joseph's Hospital. At this time there was no change in her physical condition, except for the presence of a well defined tumor, about the size of a small orange in the middle of the epigastrium. The tumor was somewhat movable. Several days later an exploratory operation was performed, disclosing a tumor mass in the anterior wall of the stomach, extending almost from the lesser to the greater curvature, with a puckered scar in its center which appeared like a large indurated ulcer. The mass was about midway between the cardia and the pyloris. There

were several large glands along the greater curvature at the border of the ulcer, and several small glands along the lesser curvature. The gall bladder contained several large stones. The ducts were normal, and the serous coat of the gall bladder was normal in appearance. There were no enlarged glands in the mesentery, and except over the surface of the ulcer the entire peritoneum was normal in appearance. A probable diagnosis was made of inoperable carcinoma. A gland was removed from the margin of the ulcer, the gall bladder was emptied and drained through a stab wound, and the incision closed. The patient is now convalescing in the hospital. Sections of the gland were examined by Dr. Hopkinson, who described it as a typical picture of tuberculosis.

Tuberculous ulcer of the stomach is a very rare lesion, there being comparatively few reported. In 1916, Dr. Broders of the Mayo Clinic, reported the first case in their experience, out of some 4,000 operations upon the stomach. In their case, a diagnosis of carcinoma of the stomach was made and a resection performed, and they were able to demonstrate tuberculosis, not only in the regional glands, but in the ulcer itself. We feel certain that in this case we were dealing with a tubercular ulcer, although we were unable to remove tissue from the ulcer itself.

DR. L. F. JERMAIN.

SUBJECT: DIABETES.

Gentlemen:

The presentation of this individual suffering from Diabetes Mellitus is of little interest unless unusual complications exist. A careful study, however, of the clinical and laboratory findings as revealed by well kept records, progress sheets, diet charts, etc., is most instructive and fascinating. I am, therefore, presenting for your consideration today several of these records and will use them as a basis for general discussion of the modern management of a diabetic.

A well kept record should include a carefully obtained family history, a history of previous disease and the present complaint to date. Special stress should be placed upon the age of the patient, his habits and the duration of the disease. The record should also contain the findings of a thorough physical examination (both negative and positive), a blood pressure estimation, daily estimation of the total quantity of urine, its specific gravity, the percentage of glucose, acetone and diacetic acids and albumin. There should also be recorded the amount of blood sugar, both beginning and after completion of the period of fasting, alveolar C. O.^{2} tension before beginning and upon completion of period of fasting. There should be daily estimation of the weight of the patient and a daily chart showing amount of carbohydrate, proteid and fat foods in grams given to the patient and their caloric value. Progress notes should be made frequently indicating the weight of the patient, general condition of the patient, and times of disappearance and reappearance of sugar in the urine.

The epoch making experimental studies of Allen have markedly altered our views regarding this disease. Instead of viewing diabetes as simply a disturbance of carbohydrate metabolism we now look upon it as a condition in which all metabolic processes are disturbed, perhaps depressed, and in which one of the most dangerous manifestations, namely acidosis, is due largely to perversion of the metabolism of fats.

The common occurrence of diabetes in individuals who habitually over eat not of carbohydrate foods alone, but of all varieties of foods, gives rise to the thought that perhaps we are dealing with an exhaustion of metabolic processes, both constructive and destructive, and exhausted or depressed function of the pancreas and that the success of our modern management rests upon the degree to which these exhausted functions can be restored.

The chief objects to be obtained in the management of this disease are:

First. A determination of the severity of the disease.

Second. To render the urine sugar free without endangering the life of the patient through the development of acidosis.

Third. To determine the tolerance of the individual not alone for carbohydrate foods but to all foods.

Fourth. By keeping the urine sugar free to gradually increase the patient's tolerance for food.

Fifth. To so arrange the diet as to properly nourish the individual without having sugar reappear in the urine.

The only classification of diabetes of any value from a therapeutic standpoint is the clinical classification into types according to the severity of the

metabolic disturbance as expressed by the readiness with which his urine becomes sugar free and his tolerance for food.

The proper management of diabetes can be carried out only if the case is hospitalized. I have for some time refused the responsibility of caring for diabetics except in a hospital, or sanitarium, where adequate laboratory equipment and help and trained dietitians were available. Upon entering the hospital the patient is placed for twenty-four hours on a general diet such as he has been accustomed to. During this time all urine is collected, the amount and specific gravity determined, and a specimen of the twenty-four hour urine sent to the laboratory for the purpose of determining the percentage of glucose, acetone, diacetic and B. butyric acids. At the same time blood sugar and alveolar C. O.^{2} tension determinations are made. If acetone and diacetic acids are present in large amounts the safe procedure is not to institute complete starvation, but to gradually eliminate first the fats, then the proteids and finally all carbohydrates from the dietary.

It is a well known fact that acidosis is increased by starvation and in an individual already suffering from acidosis the sudden withdrawal of all food may result in coma and death. Starvation, whether begun at once or gradually, must be continued until the urine is sugar free. The average time required to accomplish this in the mild and moderately severe cases is three to four days. In severe cases where the urine does not become sugar free in a week the fasting period may be interrupted. Fasting need not be continued until blood sugar is normal. Consideration, however, must be given the blood sugar where the percentage is unusually high, or where, as in chronic nephritis, we have reason to believe that the renal threshold is high.

As soon as the urine is sugar free, carbohydrate feeding in the form of 5 per cent vegetables is begun. Usually the patient is allowed 15 grams of this food to be increased daily until 35 or 40 grams are reached. Next a proteid, preferably in the form of egg albumin, is added, and later fats in the form of egg yolk and butter are allowed. The amounts of carbohydrate, proteid and fat foods are gradually increased until sugar reappears in the urine. The amount of food given on the day previous to the reappearance of sugar in the urine represents the tolerance of the patient. Daily examinations of a specimen of the twenty-four hour urine must be made.

INTRAVENOUS TREATMENT FOR HAY FEVER.

BY JOHN P. KOEHLER, M. D.,

CHIEF OF MILWAUKEE COUNTY DISPENSARY.

From August 19th to September 14th, 1921, the Milwaukee County Dispensary treated thirteen patients suffering from very severe symptoms of Hay Fever with an intravenous injection of sodium iodide. Each injection consisted of 31 grains of sodium iodide in a 20 c.c. solution. There appeared to be no reactions immediately following the injections. Nearly all patients noticed a salty taste an hour after the injection which continued for eight or ten hours.

One patient states that he felt drunk for two days after his injection. Another patient developed a skin rash after his second injection.

All treatments were given during warm weather and any improvement cannot be attributed to any change in climate. Cooler weather in Milwaukee, began about September 18th. All patients were instructed to return immediately for further treatment when their Hay Fever symptoms re-appeared. None returned after their discharge and later investigations showed that none had found it necessary to do so.

Nearly all of these patients had tried every known treatment, without any improvement, before coming to us. They therefore, had very little or no confidence in our treatment so that any results obtained, cannot be credited to mental suggestion.

We shall at this time, make no attempt to explain how or why sodium iodide given intravenously appears to relieve symptoms of Hay Fever, but shall very briefly give our results.

1. Mrs. A., Age 40, Weight 155, Housewife. Has had Hay-Fever for 15 years. Always began August 15th. From July 15th, to August 16th, she received six intravenous injections of Iron and Arsenic as prophylactic treatment. August 18th, Hay Fever attack began. August 19th, received an injection of Sodium Iodide. August 20th, patient reports that within twelve hours after injection, Hay Fever was entirely gone. August 26th, patient reported for another injection because she felt her Hay Fever returning. On account of my absence from City, received no treatment. September 6th, patient reports Hay Fever back with Asthma. Was given second injection. September 7th, patient reports a good night's rest and much improved.

September 9th, still comfortable. Given third injection. September 13th, patient reports that she has been in the country and has been troubled very little with either Hay Fever or Asthma. Discharged.

2. Miss C., Age 30, Weight 130, Rural Public Health Nurse. Has had Hay Fever since 6 years of age. Usually begins the middle of July and ends about September 7th. August 30th, given first injection. Noticed marked improvement at the end of three hours. August 31st, fifty per cent improvement. Given second injection. September 1st, no further improvement after second injection. September 3rd, Hay Fever symptoms re-appearing but not as severe as before treatment. September 4th, patient felt comfortable. Discharged.

3. Mr. F., Age 38, Weight 142, Auditor. Has had Hay Fever for 14 years. Begins middle of August and lasts until last of September or first frost. Has considerable cough. August 31st, received first injection. September 2nd, patient reports only about ten per cent improvement. Is given second injection. September 3rd, reports that he is comfortable and at least fifty per cent better. Discharged.

4. Mr. P., Age 22 years, Weight 120, Manager of Garage. Has had Hay Fever for 5 years. Begins August 15th, and ends at first frost or about last of September. No cough or Asthma but very severe symptoms of Hay Fever. September 2nd, given first injection. Patient very nervous. September 3rd, patient reports that he is at least 75 per cent better. September 6th, reports that Hay Fever is practically all gone. Discharged.

5. Mr. C., Age 38, Weight 150, University Professor. Has had Hay Fever for 20 years. September 2nd, given first injection. Felt much better the next day. At least 25% improvement. September 7th, feels comfortable. Was given second injection. September 10th, reports that he doesn't know that he has Hay Fever. Discharged.

6. Mr. N., Age 23, Weight 180, Laborer. Has had Hay Fever since 9 years of age. Begins August 1st, and lasts until first frost. Hay Fever was complicated with severe Asthmatic attacks. September 2nd, given first injection. Asthmatic attack improved before patient left the table. Hay fever and Asthma both gone the next day but states that he felt as if drunk for two days after which he went to work and remained entirely free from all symptoms without any further treatment.

7. Mr. C., Age 27, Weight 140, Machinist. Has had Hay Fever for 10 years. September 2nd, given first injection. September 3rd, reports at least 25% improvement. September 6th, given second injection. September 9th, reports 75% improvement. Discharged.

8. Mrs. M., Age 48, Weight 180, Housewife. Has had Hay Fever for 35 years. This year she had severe asthmatic attacks with Hay Fever. Patient was unable to leave the house. September 2nd, given first injection. September 3rd, patient at least 25% better. September 6th, patient is comfortable and able to come to her family physician's office for her second injection. Patient received four injections in all. She did not improve as much as the other cases, but was made at least comfortable.

9. Miss N., Age 38, Weight 135, Seamstress. Has had Hay Fever for 5 years. September 6th, given first injection. September 7th, patient reports 75% improvement. September 12th, Hay Fever symptoms began again. Given second injection. September 13th, reports that Hay Fever symptoms are gone. Discharged.

10. Mr. B., Age 44, Weight 240, Printer. Has had Hay Fever for 15 years. This is the first year with Asthma. Began August 2nd. September 8th, given first injection. September 9th, reports 75% improvement. Discharged.

11. Mr. D., Age 52, Weight 141, Locomotive Inspector. Has had Hay Fever for 20 years. Begins August 20th. September 8th, given first injection. September 9th, reports 25% improvement. Was given second injection. September 10th, reports 75% improvement. Discharged.

12. Mr. P., Age 41, Weight 205. Has had Hay Fever for three years. Begins first part of September and lasts into October. September 8th, given first injection. September 9th, reports no improvement. Given second injection. September 13th, reports no improvement. Has skin rash.

13. Mr. B., Age 18, Weight 140, Student. Has had Hay Fever since five years of age. Begins August 10th, and lasts until frost. Has been unable to sleep for five weeks on account of asthmatic attacks. Given first injection September 12th. September 13th, reports 50% improvement. Had a good night's sleep. September 14th, patient still feels comfortable. Given second injection. September 15th, patient reports still further improvement. Discharged.

No doubt in some of these cases, large doses of sodium or potassium iodide per mouth would have given some relief, but never so much or so quick relief as the intravenous administration.

One syphilitic patient while on large doses of potassium iodide, developed Hay Fever and received immediate relief when given 30 grains of sodium iodide intravenously.

We were first tempted to use sodium iodide intravenously for Hay Fever because we knew from reliable sources that this treatment was successful in bronchial Asthma, which is so closely related to Hay Fever.

Many medical men are prejudiced against intravenous medication because it is advertised by irregulars and quacks, but patients want results and if Asthma and Hay Fever can be relieved by the intravenous administration of sodium iodide without any danger to the patient, we should not stand by and watch the advertising medical men reap a harvest because we are too proud and conservative to use their treatment.

BAINBRIDGE'S SHELLAC.

During the recent meeting of the Tri-State Medical Society, W. S. Bainbridge of New York mentioned a shellac which he has used to cover very painful and deep seated lesions of mucus surfaces. A number of those present asked Dr. Bainbridge for instructions as to how to prepare the shellac. He replied that it required a very definite technique, information on which he would forward to the Medical Journals of the three States for the benefit of all who cared to employ it.

The composition and technique of the preparation are as follows:

Tincture Benzoin Comp.	16 parts
Storax	12 parts
Balsam tolu	4 parts
Ether	160 parts
Nosophen	16 parts

Mix the Balsam tolu, Storax and Tincture Benzoin Comp., shake well and add the Ether. Allow to stand two or three days, shaking occasionally, until thoroughly dissolved. Filter and add the Nosophen.

PREVENTIVE MEDICINE

Edited by
W. D. STOVALL, Chairman
Section on Preventive Medicine, State Medical Society of Wisconsin

AN ILLUSTRATION OF THE IMPORTANCE OF PROMPT REPORTING OF COMMUNICABLE DISEASES BY THE PHYSICIAN TO THE HEALTH OFFICER.

BY LOUIS DORPAT, M. D.,
DEPUTY STATE HEALTH OFFICER,
RHINELANDER.

Every fable has its moral. The present account is neither a fable, nor has it only one moral; it has several. However, only one shall be emphasized. In fact, this has already been done in the title. The others may very easily be discovered by searching just a little beneath the surface. As far as the interests of preventive medicine or public health work are concerned, it is not of much importance whether they are exposed to view or not.

"What difference does it make whether I report my cases of communicable diseases to the local health officers a day or two sooner or later?" asks the careless physician in defense of his tardiness in reporting cases. "I always tell the family to take precautions. And even though there is no quarantine placard posted, isolation is fairly well observed in most cases."

A thinking person, one would suppose, would hardly be guilty of such an absurd utterance, yet every public health worker knows that there are men in the medical profession who permit days to pass before they report their cases to the health officer and who, for their justification, offer excuses as lame as the one just quoted.

Recently a physician in a small Wisconsin town reported a case of infantile paralysis to the State Board of Health on one of the cards distributed by local health officers to physicians to be used in reporting communicable diseases to the local health officer within twenty-four hours. The physician accompanied the card with a short letter to the State Board of Health asking for an investigation of the case. The State Board of Health wrote the physician calling his attention to the law providing for reporting cases to the local health officer within twenty-four hours and requesting him to report the case to the local health officer in conformity with the law.

The physician wrote a second letter saying that the patient, on the advice of the local health officer, had been removed on a public railway to a hospital and that it was imperative that the State Board of Health make a diagnosis of the case to determine whether or not a case of quarantinable disease had been handled in such a criminally careless manner.

A deputy state health officer was then sent to make a diagnosis and a complete investigation, and these are the facts he found:

The ailment in question was a very severe case of anterior poliomyelitis in a married woman, twenty-one years of age. The physician who made the complaint against the local health officer, also a physician, had seen the case on Sunday, on Monday, and on Tuesday. The paralysis was already present on Sunday and constantly increased in degree and extent, involving all four extremities. On Tuesday the family became very much alarmed and desired that the patient be taken to a hospital in a neighboring city. Though the physician had seen the case on three consecutive days, he had not reported it to the local health officer.

When the husband of the patient informed the attending physician that he wished to take his wife to the hospital, the physician told him that the patient was too weak to be transported and

that furthermore, the family should be under quarantine. Even then he did not report the case to the local health officer in order to establish quarantine and thus prevent removal of the patient.

A physician in the neighboring city where the hospital is located was called to see the case, but being too busy to come and not knowing that it was a case of communicable disease, consented that the patient be brought to the hospital. As the attending physician declared that the patient's removal would practically mean death, the other physician in the town, who is the local health officer, was called just about twenty minutes before train time to give his opinion whether the patient had or had not sufficient strength to be removed. He made a hurried examination, taking the patient's pulse and listening to her heart and respiration, and said that in his opinion the patient had strength enough to undergo the strain of transportation to the hospital. He did not make a diagnosis. In the short time allotted to him before the arrival of the train he probably could not have made one. In fact, the nature of the ailment was not discussed, and the health officer was not informed that the other physician had made a diagnosis of a communicable disease. It appears, however, that the health officer was under the impression that the attending physician had made a diagnosis of spinal meningitis.

A discussion of the ethical propriety of the health officer's action in visiting his colleague's patient in his absence and giving an opinion on the patient's physical condition is beside the question here, though it may briefly be said that the health officer later made the declaration that he considered the patient belonging to the physician to whom she was to be sent in the hospital.

When the attending physician learned that the health officer had seen his patient and that she was thereafter taken to the hospital in a railway baggage car, he reported the case, as already related, to the State Board of Health, requesting an investigation. When the health officer, in turn, heard of this, he went to the attending physician's office and demanded to know why, if the case was communicable and quarantinable, the physician had not reported it to the health officer.

A disgraceful scene followed. With an icy frigidity one colleague addressed the other. But very soon there was warmth enough generated to melt a small iceberg in an exceedingly high latitude with enough left over to heat a city flat in Minneapolis. The colloquy between the two fellow members of the healing profession grew more heated and heated until words were inadequate to express their fraternal feelings. The pent-up heat burst forth in furious flames of bitter hatred and passion, terminating in a seething, blazing, raging, roaring physical conflict *a la* Dempsey-Carpentier. The dull thud of tightly clenched fists, otherwise accustomed only to tender and merciful administrations in the sickroom at the bedside of the weak and suffering, but now forcibly, frantically driven against the flesh of a brother, floor and clothing covered with warm human blood—what a harmonious, charming, elevating picture!

As a good American with a deep-seated sportman's love for the art of boxing the reader probably would be delighted to know who passed forth as victor from the combat. This is really not essential. Suffice it to say that the attending physician swore out a warant for the health officer's arrest for assault and battery and that it was decided to have a jury trial.

This is a difficult world for everybody. The young physician entering upon his life work has not a playground but a battlefield before him. But such battles as the one just described—are they a necessary element in the struggle for existence and supremacy? How could this one have been avoided? Why such shameful conduct and scandalous, ruinous publicity, of most unbecoming and improper pugnaciousness between two brotherly disciples of Aesculapius and Hippocrates? Could it not all have been avoided?

It could and should and would have been avoided if the attending physician had reported his case in writing to the local health officer within twenty-four hours as required by law. And that is why I deemed it worth while to tell about this event. It shows so clearly how not to act.

The question whether the health officer did or did not know that the patient had a communicable disease when he failed to prevent her removal to the hospital is, in the parlance of the lawyer, irrelevant and immaterial as far as the point now under consideration, namely, the prompt reporting of communicable diseases to the local health officer, is concerned. It is also immaterial whether

the attending physician was correct or incorrect in his contention that by permitting the case to be taken away the health officer relieved the attending physician from all responsibility of reporting the case to anyone but the State Board of Health. (I wish to say in passing, however, that the deputy state health officer did not uphold the physician in this contention, as there is no law or rule or regulation of the State Board of Health making any such provision).

Rule 4 of the Rules Pertaining to the Prevention and Control of Contagious Diseases provides that "it shall be the duty of every physician called to attend a person sick, or supposed to be sick, with any of the diseases declared to be dangerous and contagious within twenty-four hours thereafter to report in writing the name and residence of such person to the board of health or its proper officer within whose jurisdiction such person is found."

Had the attending physician observed this plain and simple rule all the subsequent disagreeable events and difficulties would have been avoided. If the case had been properly reported, the health officer would have quarantined the house, and the patient never would have been placed on a railway train, exposing many persons to dangerous infection.

Writing thus fully on a case of this nature is probably justifiable by the fact that this case may be considered an excellent one to illustrate strikingly the great necessity and importance of prompt reporting of communicable diseases by the physician to the local health officer. No doubt the reader will agree that the case teaches other valuable lessons.

FACTORS RESPONSIBLE FOR THE INCREASE OF TYPHOID FEVER IN WISCONSIN, DURING THE YEAR 1921.

BY F. F. BOWMAN, M. D.,

DEPUTY STATE HEALTH OFFICER, WISCONSIN STATE BOARD OF HEALTH.

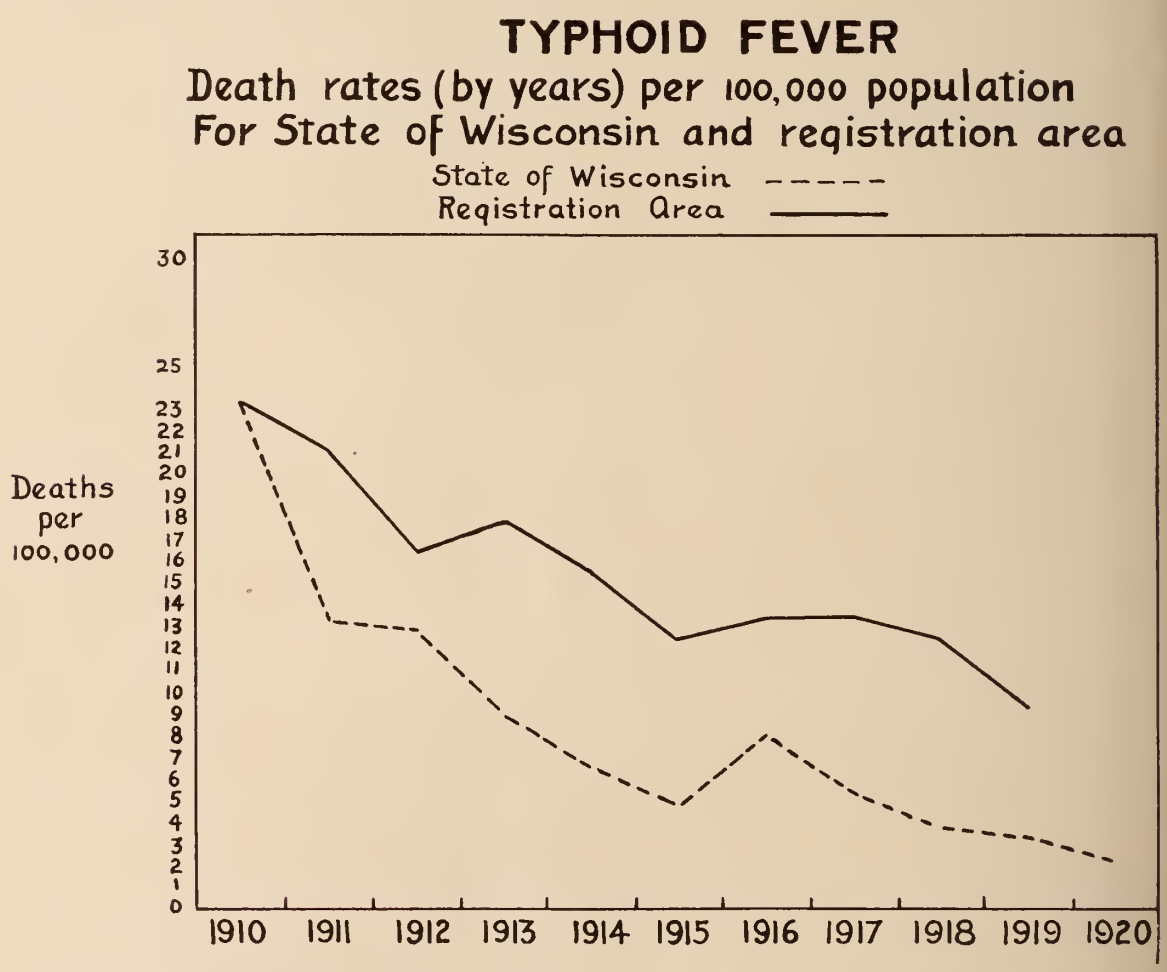
MADISON.

That the incidence of typhoid fever in Wisconsin, both in morbidity and mortality, has been low, is a situation of which we may be justly proud. For a period of ten years the State has been well below the registration area of the United States, comprising thirty-three states and eighteen cities in non registration states. This fact, however, should not lead to a sense of false security, for it does not mean that we are peculiarly located, geographically, or necessarily more correct in our manner of living or otherwise removed from the sources of contamination from which other communities suffer. Too often such beliefs lead to rude awakenings because our dulled senses have failed to scent the danger signals. That we have many open portals through which disaster may enter is apparent, especially to those who are engaged in public health work and have opportunities for scanning the whole field and weighing possibilities as individual communities can not.

It is to some of these possibilities that it is desired to call attention. That Wisconsin has an unusual water supply, both as to quantity and quality, is much in our favor. A great deal of effort has been put forth by the State Board of Health, through its Sanitary Engineering Department, to encourage communities in supplying themselves with safe, potable water, as well as to make provision for the proper disposal of wastes, thereby preventing pollution. Many communities have availed themselves of their opportunities. It is, however, regrettable that a large number have not and lay themselves open to just censure and liability through their negligence. In such places, the sporadic case may become the nucleus of an epidemic, furnishing the fertile field for the carrier to spread broadcast his infection. It is only by plugging the gaps that the flood can be prevented, for the carrier is abroad. Modern methods of travel, coupled with restlessness, more than ever bring a changing flow of contact not only to the larger centers but to the isolated and unfrequented districts where the provisions for protection are less liable to be ideal than when travel is confined to the beaten lines of railroads and the larger centers of population.

Automobiles are on the byways quite as often as the highways, traveling self sufficient, remaining wherever night falls or fancy dictates, giving little thought to sanitation. Consequently it resolves itself into a game of give and take. In Wisconsin, where typhoid has been negligible, it is more likely to be take than give. Therefore, it

behooves the smaller and more remote communities to adopt every precaution to prevent this infection from gaining a foothold. Each year more communities are offering free camp sites for tourists. In many of these places little or no provision has been made for policing or providing proper regulations whereby not only the tourist may be protected from his fellow tourist, but the community which offers him its hospitality may be secure from saddling on itself a greater loss from disease than any gain that might accrue through the sojourn of the wayfarers. Large communities are least liable, as the transient is not such a novelty and proper provisions are more apt to obtain. It is the unrestrained wanderer to whom attention should be directed. There is another already fruitful source of infection in the wandering camping type, shifting from place to place, constantly changing within itself, living in a temporary way, apart from proper protective facilities and subjected to conditions which may and have invited outbreaks of typhoid. Reference is made to highway construction camps. These are located along or adjacent to some piece of construction and are distinctly temporary in character, providing board and keep for man and beast, often tent built, often located near a farmhouse from which water and milk may be supplied. Again, they may be located at a distance from habitations, depending on springs or uncertain water supplies, according to the locality in which the construction is undertaken. Many camps are located in isolated country, but near springs and on small streams. It is evident that unless the principles of sanitation and hygiene are carefully observed, typhoid and other intestinal infections will occur.



The personnel of these gangs constantly changes, men drifting from camp to camp. Owing to slack conditions they also come from various places seeking employment. The writer has investigated some of the conditions resultant upon such a system. In one camp an employee was stricken with

typhoid fever in June. He remained in camp until the disease compelled different care, then returned by train to a distant city to be hospitalized. Later the same gang, having gone to another place, had a second employee stricken. This patient was transferred to the same city for treatment. Still later a third individual, after another move of the camp, succumbed to typhoid fever. These cases were proven typhoid by laboratory tests.

In another camp a more definite history was available because the infection was confined to one location, thereby permitting an opportunity of tracing the source. Nine cases with one fatality occurred in this camp. Six of the nine cases dispersed to four widely separated cities for treatment, while the balance were cared for in the country-side. Several interesting things developed in this investigation. The wife of the first individual, who became ill, not only took care of her husband, but at the same time cooked for the camp and procured the drinking water from a spring. The eating shack was in no way protected from flies. Open latrines of the crudest type were nearby, while the horse tent supplied an abundance of manure for the proper breeding of flies. Thus, the stage was set for the dissemination of the disease. The spring water was heavily polluted. How the disease was spread is apparent. However, the origin of the infection was not so certain. This camp, being subject to flooding by freshets, may grossly pollute the adjoining water course. Thus, five cities and the country-side had a spraying of typhoid infection. If proper precautions are not observed, the communities into which this has been introduced are not provided with safe water and milk supplies, and slips in the technique of the management of these cases occur, further dissemination of the disease is highly probable.

Every physician in the state, as well as local health authorities and citizens interested in community health, should familiarize themselves with camping conditions, and see that the necessary precautions are taken in advance of trouble. The tracing back to the source of infection is interesting, difficult and often inconclusive, yet at the same time of undoubted value. The ounce of precaution puts us on a par with present day scientific investigation. The incidence of typhoid fever has very materially increased in the State of Wisconsin this year, 1921.

TABLE I.

Number of cases, number of deaths and death rates per 100,000 population from typhoid fever in Wisconsin from 1911 to September, 1921.

Years	Number of Cases	Number of Deaths	Death Rates per 100,000 Population
1911	1039	319	13.5
1912	1007	310	13.0
1913	670	237	9.8
1914	553	176	7.2
1915	420	123	5.0
1916	1009	202	8.1
1917	486	137	5.5
1918	368	102	4.0
1919	215	82	3.2
1920	313	59	2.2
1921 (9 mos.)	349	52	2.6

In the table accompanying this article (Table 1) is given the number of cases, number of deaths and death rates per 100,000 population from typhoid fever from 1911 up to September, 1921. It will be seen that there has been a steady decline in the death rates, reaching a low point in 1920, when the rate was but 2.2 per 100,000 population. In the first 9 months of 1921, however, more cases were reported than during the preceding 2 years, indicating an increased prevalence of the disease. The death rate during the first 9 months of 1921 exceeded that of 1920 but is lower than any of the other previous annual rates. It is greatly to be regretted that the splendid record had to be shattered by the increased prevalence of typhoid fever during 1921. However, the wandering camps, with the carelessness and indifference of the personnel to sanitation and hygiene, is believed to contribute very definitely to the dissemination of typhoid fever. It is incumbent, therefore, upon each community to devise adequate means of self protection.

PUBLIC HEALTH NEWS ITEMS.

TYPHOID FEVER IN HIGHWAY CONSTRUCTION GANGS.

Several cases of typhoid fever have been discovered in highway construction gangs in the southern and southeastern parts of the State. Dr. Bowman has investigated several of the cases, but owing to the nomadic tendencies of the workers and the necessarily changing character of the work it has been exceedingly difficult to trace the

source of the infection. That the presence of typhoid fever in construction gangs is a real menace not only to the workers themselves but also to the people residing near the camps (both during and after the establishment of the camp) is quite obvious. There is a possibility of an extensive outbreak of typhoid fever if the proper conditions are unfortunately combined.

DIRECTOR OF THE BUREAU OF COMMUNICABLE DISEASES.

Dr. Harry M. Guilford has been appointed on the staff of the State Board of Health and attached to the Bureau of Communicable Diseases. Dr. Guilford began service on October 12th. He served as Medical Inspector in the Minneapolis Health Department from 1913 to 1916, and then became Commissioner of Health of that city for a term of four years. He has had extensive experience in the prevention and control of communicable diseases.

NURSING EDUCATION.

In a recent issue of the Communicator, a State Board of Health publication, it is announced that the Committee on Nursing Education is at work on the formulation of standards. The writer says: It may be recalled that the question of qualifications for nurses is one which has rent professional circles into two sharply opposed camps. One side believes that attention should be concentrated upon the training of highly qualified women by the most thorough theoretical and practical methods available. Advocates of such training believe that nursing standards should be increased and that qualified persons should be registered through adequate state examinations. The writer believes that there is a definite demand for the services of these highly qualified nurses. However, it should be remembered that the people generally cannot afford to employ these women because of the high values set upon their services.

The opposition, while admitting the necessity for trained and registered nurses, believes that there should be another and larger group of nurses known as practical nurses. It is proposed that these women be prepared to handle routine work through short courses and that the charges for their services be within the reach of moderately well to do families. It is pointed out that such persons can take excellent care of the sick and at the same time manage the affairs of the household to which they come. The highly trained nurse, on the other hand, demands extra service for herself, necessitating the employment of an additional person in the afflicted family. The Commissioner of Health of Chicago is a leading exponent of the practical nurse idea and has been derided for graduating nurses after a course lasting a few weeks. It is a matter of record, however, that many practical nurses render gratifyingly efficient service. There is no intention of precipitating a controversy as to the respective merits of practical and registered nurses. Suffice it to say that the matter is being discussed rather earnestly and occasionally vehemently, thereby making it a subject with which public health workers should be conversant.

ARE PHYSICIANS INTERESTED IN PREVENTIVE MEDICINE?

Several months ago, before the present intensive cancer campaign was begun, a short article was inserted in the Wisconsin State Medical Journal, offering to send free to any physician upon request a copy of the Public Health Service publication on cancer. A resumé of the principal features of the booklet was included as a possible inducement for physicians to write for the pamphlet. Only one physician in the State wrote for the booklet. Would some other way of getting the booklet into the hands of the physicians have been more effective? If so, how should it have been done?

TYPHOID FEVER IN EAU CLAIRE.

There was recently an explosive outbreak of typhoid fever in Eau Claire which was investigated promptly by Dr. Gudex and Mr. Baker, State Sanitary Engineer. An epidemiological study showed that the disease was undoubtedly contracted at a druggist's banquet but peculiarly confined to the volunteer waitressess. Some article of food eaten by these waitresses and not by the guests is suspected of having caused the disease. What was this article of food it has been impossible to learn, though an attempt will be made through a questionnaire sent to each person in attendance upon the banquet to reach a conclusion by exclusion.

NATIONAL CANCER WEEK, OCTOBER 30—NOV. 5TH.

As a result of the persistent educational campaign which has been waged through the medium of the newspapers during the past month the public mind is becoming thoroughly aroused to the cancer menace. That this is true is evidenced by the steady increase in the number of requests which are coming to the State Board of Health for cancer booklets, lecture outlines and more intimate information concerning various phases of the disease.

The next issue of the Quarterly Bulletin will be devoted exclusively to cancer topics, thereby making available a large number of publications in which the facts concerning this malady are clearly set forth.

DIPHTHERIA.

It is becoming apparent that our ideas concerning the prevention and control of diphtheria are undergoing a radical revision. It is generally conceded that in antitoxin we have a remedy of genuine worth when it is used sufficiently early and in large quantities. However, it is now known that the majority of patients who die from diphtheria do not have the benefit of competent medical attendance and sufficiently early injections of antitoxin. Antitoxin is primarily a remedy for the treatment of the sick. Our responsibility extends farther and it is probable that we have lost sight of our primary duties as health officials, namely to prevent this illness.

As rapidly as possible public health officials should learn, demonstrate and practice both the Schick test and toxin-antitoxin immunization.

Anent the unusual prevalence of typhoid fever in Wisconsin during the present year, Dr. F. F. Bowman, Deputy State Health Officer, advances the interesting suggestion that the artificial immunity conferred upon many men through antityphoid inoculation while serving in the Army and Navy is wearing off. As a result of this lack of protection it is believed that a number of persons who were previously immune, are now susceptible to the disease. Dr. Bowman has already observed one man who, though inoculated three years ago, now has typhoid fever.

Following her refusal to pursue treatments, a venereally afflicted Manitowoc woman, after investigation by a deputy state health officer and upon order of the State Board of Health, was committed by a local judge to a state institution for treatment.

Upon request of Minnesota authorities, a college student, who was infected with a venereal disease in February, 1921, was apprehended in this state by health officials and promised to continue treatment until cured.

The jurisdiction of a county nurse in attending cases of communicable disease in rural school pupils enrolled in a neighboring city came before the State Board of Health for a ruling. It was held that such cases in city schools are properly supervised by the nurses employed by the city. Upon a request of the local health officer of the township outside, however, a county nurse should take throat swabs of pupils attending city schools and otherwise assist the local health officer. A city board of health may refuse to receive rural pupils until they come with a clean bill of health furnished by the health board of the town where they live.

OBSTETRIC DEATHS.

Barton Cooke Hirst, Philadelphia (*Journal A. M. A.*, Oct. 29, 1921) believes that the average maternal mortality from the process of generation is about 0.3 per cent in private house practice and about 0.1 per cent in the best conducted maternities not dealing with specially complicated cases. The causes of death are: (1) accidents, such as hemorrhage; rupture of the uterus from overlooked obstruction; injudicious use of pituitary extract; technical errors in operative procedures; anesthesia; (2) embolism, acute dilatation of the heart, profound emotion, conditions often unavoidable; (3) the toxemias and eclampsia, usually avoidable; (4) infections, minimized by proper technic and efficient curative treatment, but not wholly avoidable, and (5) inter-current affections not usually controllable. The most practicable and efficient means of reducing the mortality of the generative process are: (1) improvement in the obstetric teaching of medical schools. (2) Multiplication and enlargement of maternity hospitals, under heads competent to deal surgically or otherwise with all the complications and sequelae of the child-bearing process, including all the diseases of women. (3) The establishment of maternity centers for the poor in order to give the women prenatal care, to furnish skilled attendants in labor, and to follow up the results of childbirth. In all three of these measures, the state should lend a helping hand.

THE STATE MEDICAL SOCIETY OF WISCONSIN

ORGANIZED 1841

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The Wisconsin Medical Journal, Official Publication

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County.	President.	Secretary.
Ashland-Bayfield-Iron	F. G. Johnson, Iron River	Dell Andrus, Ashland.
Barron-Polk-Washburn-Sawyer-Burnett	G. A. Larson, Hayward	D. L. Dawson, Rice Lake.
Brown-Kewaunee	W. M. Wochos, Kewaunee	R. M. Kispert, Green Bay.
Calumet	C. F. Lawler, Hilbert	F. P. Knauf, Kiel.
Chippewa	E. P. Ellenson, Chippewa Falls	G. M. Smith, Chippewa Falls.
Clark	S. M. Kyes, Owen	A. L. Schemmer, Colby.
Columbia	W. J. Thomson, Portage	John Bentley, Portage.
Crawford	C. B. Lumsford, Gays Mills	A. J. McDowell, Soldiers Grove.
Dane	H. P. Greeley, Madison	H. M. Carter, Madison.
Dodge	F. T. Clark, Waupun	A. E. Bachhuber, Mayville.
Door	H. C. Sibree, Sturgeon Bay	T. C. Proctor, Sturgeon Bay.
Douglas	W. H. Schnell, Superior	J. C. Kyllo, Superior.
Dunn-Pepin	N. L. Howison, Menomonie	
Eau Claire	L. H. Flynn, Eau Claire	E. P. Hayes, Eau Claire.
Fond du Lac	W. H. Folsom, Fond du Lac	D. N. Walters, Fond du Lac.
Grant	J. H. Fowler, Lancaster	M. B. Glasier, Bloomington.
Green	W. B. Gnagi, Monroe	W. B. Monroe, Monroe.
Green Lake-Waushara-Adams	G. E. Baldwin, Green Lake	A. J. Wiesender, Berlin.
Iowa	D. B. Hamilton, Dodgeville	W. J. Pearce, Dodgeville.
Jefferson	G. E. Eck, Lake Mills	H. P. Bowen, Watertown.
Juneau	E. H. Townsend, New Lisbon	A. T. Gregory, Mauston.
Kenosha	C. A. Palm, Kenosha	H. M. Ripley, Kenosha.
La Crosse	J. K. Schreiner, La Crosse	R. D. Jamieson, La Crosse.
La Fayette	H. O. Shockley, Darlington	R. B. Quinn, Darlington.
Langlade	L. A. Steffen, Antigo	J. C. Wright, Antigo.
Lincoln	H. G. Hinckley, Merrill	A. R. Wittman, Merrill.
Manitowoc	A. M. Farrell, Two Rivers	V. V. Kellner, Maribel.
Marathon	R. M. Frawley, Wausau	M. L. Jones, Wausau.
Marinette-Florence	J. W. Boren, Marinette	C. H. Boren, Marinette.
Milwaukee	P. H. McGovern, Milwaukee	Dan. Hopkinson, Milwaukee.
Monroe	T. J. Sheehy, Tomah	L. H. Prince, Sparta.
Oconto	R. J. Goggins, Oconto	C. J. Ouellette, Oconto.
Oneida-Forest-Vilas	W. C. Bennett, Rhinelander	E. R. Boyer, Rhinelander.
Outagamie	N. P. Mills, Appleton	V. F. Marshall, Appleton.
Ozaukee	G. S. Cassells, Port Washington	A. A. Mesch, Saukville.
Pierce	C. A. Dawson, River Falls	Rollo Cairns, River Falls.
Portage	D. S. Rice, Stevens Point	F. A. Marrs, Stevens Point.
Price-Taylor	G. C. Nedry, Medford	G. C. Wichman, Rib Lake.
Racine	F. C. Christensen, Racine	Susan Jones, Racine.
Richland	H. C. McCarthy, Richland Center	G. Benson, Richland Center.
Rock	C. H. Sutherland, Janesville	E. B. Brown, Beloit.
Rusk	C. E. Bugher, Ladysmith	L. M. Lundmark, Ladysmith.
Sauk	D. M. Kelly, Baraboo	Roger Cahoon, Baraboo.
Shawano	W. J. Ragan, Shawano	E. L. Schroeder, Shawano.
Sheboygan	R. M. Nichols, Sheboygan	G. J. Hildebrand, Sheboygan.
St. Croix	E. A. Wright, New Richmond	W. H. Banks, Hudson.
Trempealeau-Jackson-Buffalo	N. S. Simons, Whitehall	F. T. Weber, Arcadia.
Vernon	J. Christenson, Westby	F. E. Morley, Viroqua.
Walworth	J. M. Marsh, Elkhorn	J. H. Young, Elkhorn.
Washington	H. F. Weber, Newburg	A. H. Heidner, West Bend.
Waukesha	G. H. Perrin, Menomonee Falls	S. B. Ackley, Oconomowoc.
Waupaca	E. H. Jones, Weyauwega	A. M. Christofferson, Waupaca.
Winnebago	F. G. Connell, Oshkosh	H. W. Morgenroth, Oshkosh.
Wood	D. Waters, Grand Rapids	F. X. Pomainville, Grand Rapids

SOCIETY PROCEEDINGS

CLARK COUNTY

The members of the Clark County Medical Society met at the Neihoff Hotel, Colby, November 10, for their regular meeting. After an excellent seven o'clock dinner, the members were entertained by the Stevens Point Glee Club, which entertainment was provided by the Abbotsford and Colby physicians for their fellow members. Following this, a lengthy discussion on the different phases of pneumonia was entered into by all present.

BARRON-P.-W.-S.-B. COUNTY

The annual meeting of the Barron-Polk-Washburn-Sawyer-Burnett County Medical Society was held at Barron, Wisconsin, Tuesday, December sixth.

An excellent program, as follows, was given:

Acute Appendicitis—Dr. Leo Hilger, St. Paul, Minn.

Laboratory Methods—Dr. Kaplan, Pathologist to St. John's Hospital, St. Paul, Minn.

Fractures of the Femur. Illustrated by X-Ray Plate—Drs. Crommett & Cornwall, Amery, Wis.

Medical Ethics—Dr. G. A. Larson, Hayward, Wis.

When is the General Practitioner Justified in Applying Von Pirquet's Test?—Dr. Nels Werner, Barron, Wis.

A Plan for Next Year's Work—I. G. Babcock.

The following officers were elected for the ensuing year.

Dr. G. A. Larson, Hayward, President.
Dr. H. B. Crommett, Amery, Vice-President.
Dr. D. L. Dawson, Rice Lake, Secretary.
Dr. Nels Werner, Barron, Censor.
Dr. E. J. Knapp, Rice Lake, Censor.
Dr. J. H. Wallis, Rice Lake, Delegate.
Dr. A. N. Nelson, Clear Lake, Alternate Delegate.

A Committee was appointed to receive information, investigate and present charges against any member of the Society found guilty of committing criminal abortions, or of abusing the privilege of prescribing liquor.

Twenty-two members were in attendance. We are planning to go still better next year.

D. L. Dawson, M. D., *Secretary.*

FOND DU LAC COUNTY

The annual meeting of the Fond du Lac County Medical Society was held the evening of Nov. 9th at the Palmer House. Dinner was served at 6:30 to twenty-five members. Officers for the following year were elected: President, Dr. W. H. Folsom, Vice-President, Dr. G. T. Boyd, and Secretary and Treasurer, Dr. D. N. Walters.

D. N. Walters, M. D., *Secretary.*

KENOSHA COUNTY

Eleven members of the Kenosha County Medical Society attended the outing given by the Walworth County Society at Williams Bay, Thursday, September 15th. After an hour's trip through the Yerkes Observatory, a bountiful dinner was served at the Fernwood Hotel. The after-dinner speakers were Drs. Dearholt, Ives and Windesheim. The afternoon proved very enjoyable.

The regular meeting for October was held at the Elks' Club, Wednesday evening, October 5th. Twenty-two members were present, Dr. Palm presiding. Dr. Allan B. Kanavel of Chicago was the speaker, his subject being "Surgery of the Hand." The lecture was illustrated by a large number of steroptican pictures.

The regular monthly meeting for November was held at the Elks' Club, Wednesday evening, November 2nd. Many of the members of the Racine County Society attended. About forty physicians were present. Dr. Palm presided.

Dr. Julius H. Hess, pediatrician, Chicago, presented the subject of "Recent Advances in our Knowledge of the Nutritional Disturbances of Infancy and Childhood and their Relation to Treatment." The ever-ready question of medical quackery received liberal discussion but no action was taken. Medical propaganda seemed advisable in counteracting these nuisances.

Dr. Palm reported splendid progress with the physisians' reading room at the Simmons Public Library, stating that soon shelves would be ready and the library opened.

H. M. Ripley, M. D., *Secretary.*

MILWAUKEE COUNTY

The regular meeting of the Milwaukee County Medical Society was held at the Hotel Pfister, November 10th. The following program was presented: "Bronchial Glands in the Diagnosis of Pulmonary Tuberculosis," with lantern slide demonstration, Dr. Frank A. Thompson, and "Auscultation," by Dr. Eugene A. Smith. A formal discussion followed the reading of these papers.

The annual meeting of the Society held in the Hotel Pfister, December 8th, was opened by a dinner at 6:30 P. M., following which Dr. Horace M. Brown addressed the society on his "European Impressions," which dealt more especially with medical conditions as they exist in Europe at the present time. The following officers were elected for the coming year: President, Dr. P. H. McGovern; Vice-President, Dr. F. A. Stratton; Secretary, Dr. D. Hopkinson, and Treasurer, Dr. J. A. Purtell.

Daniel Hopkinson, M. D., *Secretary.*

MILWAUKEE MEDICAL SOCIETY

At the regular meeting of the Milwaukee Medical Society held in the society rooms, November 22nd, the following program was presented:

Presentation of Cases and Pathological Specimens.

A Report of a Case of Stone in the Pancreas with Operation, Dr. S. J. Seeger.

The Shick Test and toxin-antitoxin immunization in children of school age and pre-school age (illustrated with lantern slides and a demonstration and interpretation of the Shick Test upon patients), Dr. A. Zingher, New York, City Health Department.

L. G. Sykes, M. D., *Secretary.*

RACINE COUNTY

The regular meeting of of the Racine County Medical Society was held in the class room of St. Mary's Hospital, Thursday P. M., October 27th, Dr. F. C. Christensen, president, presiding. Dr. J. R. Bennett of Burlington was duly elected a member of the Society. Dr. Thomas Parker, Union Grove, was elected a member of the Society by transfer card from Jefferson County Medical Society.

The program committee succeeded in getting two very able men from Milwaukee to give some splendid addresses upon a subject we all feel we know too little about, and the ordinary medical literature does not give much enlightenment. "Clinical Studies of Encephalitis Lethargica with report of cases," by A. J. Patek, M. D.

"Studies of Epidemic Encephalitis" (illustrated), Dr. Wm. Thalheimer. The attendance was fine.

Susan Jones, M. D., *Secretary.*

WEST WISCONSIN DISTRICT MEDICAL SOCIETY

The annual meeting of the West Wisconsin District Medical Society was held in Eau Claire, November 3, at which about 125 physicians from the district were in attendance. Clinics were held at Luther and Sacred Heart Hospitals in the morning and an interesting and instructive program was given at the city library in the afternoon, as follows: "General Therapy of the Diseases of Children," Dr. F. C. Rood, Minneapolis; "Surgery of the Thyroid," Dr. F. J. Plondke, St. Paul; "X-ray Findings in Lesions of the Digestive Tract," Dr. L. F. Jermain, Milwaukee, and "Modern Aspects of Caesarean Section," by Dr. F. H. Falls of Iowa City.

At the business session held at the close of the program, Dr. R. F. Werner, Eau Claire, was elected president of the association for the coming year, and Dr. J. F. Robinson, Eau Claire, secretary. The meeting closed with a banquet and entertainment at the Elks' Club.

CORRESPONDENCE

December 8, 1921.

Rock Sleyster, Editor,
Wisconsin Medical Journal,
Milwaukee, Wisconsin.
Dear Sir:—

The first examination of the National Board, under the new plan, in Parts I and II will be held as follows:

Part I, Fbruary 15, 16 and 17 (1922) inclusive.

Part II, February 20 and 21 (1922) inclusive.

Applications for examination should be received no later than January 15, 1922. Application blanks and Circulars of Information may be had by writing to the Secretary, Dr. J. S. Rodman, 1310 Medical Arts Building, Philadelphia, Pa.

Kindly publish this statement in your Journal as soon as possible.

Very truly yours,
J. S. Rodman,
Secretary National Board
of Medical Examiners.

NEWS ITEMS AND PERSONALS

The contract for the Wisconsin Soldier Memorial Hospital to be built at Farwell's Point, near Madison, has recently been given to a Janesville company. They will build three one-story buildings at a cost of $69,000, which will include the administration building and two one-story buildings for the care of patients. Construction work has already been begun.

A Carnegie medal has been awarded to Dr. Max Wolfe, who, in January, 1918, saved three children from drowning in Lake Michigan. Dr. Wolfe was at that time a student at Marquette Medical College but is now senior house doctor at the Wesley Memorial Hospital, Chicago.

Dr. Cyrus L. White, who has practiced in Mineral Point a number of months, has removed to Pittsburg, Kansas.

Dr. Eugene Chaney, formerly of Milwaukee, has recently assumed the position as medical director of the North Shore Health Resort, Winnettka, Illinois.

West Allis has under consideration an emergency hospital. This would be financed largely by the industrial concerns located in that city.

Dr. Maud Pratt, who formerly practiced at Appleton, has located in Shell Lake.

At the annual meeting of the Tri-State District Medical Society held in Milwaukee, November 14th to 17th, the following officers were elected: President-elect, Dr. Horace M. Brown, Milwaukee, who will assume office at the close of the annual assembly to be held at Peoria, Illinois, in 1922; honorary president of clinics, Dr. Wm. J. Mayo, Rochester; honorary president, Dr. A. J. Guthrie, Dubuque; president, Dr. J. F. O'Keefe, Waterloo, Iowa; vice-president from Wisconsin, Dr. J. S. Evans, Madison; vice-president from Illinois, Dr. Edwin Sloan, Bloomington; vice-president from Iowa, Dr. George Fuller, Keokuk. Dr. Wm. B. Peck, Freeport, Illinois, was re-elected as managing director, and Dr. D. G. Smith, Freeport, Illinois, as secretary-treasurer.

The board of directors of the Ripon Hospital Association has recently purchased property for the erection of a hospital at Ripon. Construction on the hos-

pital will be begun as soon as the architect's plans are approved.

Dr. C. W. Voorus has been appointed as city physician of Beaver Dam to succeed Dr. R. E. Schoen, resigned.

A fire which broke out in the attic of the Methodist Hospital, Madison, caused $10,000 damage. No one was injured, all the patients being removed to the Madison General Hospital.

Dr. M. J. Sandborn of Appleton has been honored by election to the position of secretary-treasurer of the Radiological Society of North America.

The newly appointed State Board of Medical Examiners is as follows:

J. M. Dodd, Ashland (Allopath), term ending July 1, 1923.

G. H. Ripley, Kenosha (Homeopath), term ending July 1, 1923.

C. W. Rodecker, Holcombe (Eclectic), term ending July 1, 1923.

Spencer D. Beebe, Sparta (Allopath), term ending July 1, 1923.

Minnie M. C. Hopkins, Oconto (Homeopath), term ending July 1, 1925.

Edward C. Murphy, Eau Claire (Osteopath), term ending July 1, 1925.

J. C. Brewer, Jefferson (Eclectic), term ending, July 1, 1925.

R. B. Cunningham, Cadott (Allopath), term ending July 1, 1925.

Dr. R. W. Andrae, who has been located at Plainfield for the last ten years, has sold his home and practice to Dr. F. P. Neis of Gilman. Dr. Andrae will take up post-graduate work in Chicago and New York.

John Till, the Barron County "plaster artist" was recently granted an absolute pardon by Governor Blaine. because of testimony of three physicians that had Till been held to the end of his term, his health would have been completely broken. He was serving a one-year jail sentence for practicing without a license.

The Madison board of health is contemplating appointing two full time health officers to carry out their new health program. If it is decided to do so, a larger appropriation will be asked.

Dr. Wm. E. Kiley has assumed charge of Columbia Hospital, Milwaukee, succeeding Dr. Charles W. Munger who has gone to the Blodgett Memorial Hospital, Grand Rapids, Michigan. Dr. Kiley has been resident physician at Columbia for a year.

Dr. W. L. Stephenson, a pioneer physician of Ladysmith has removed to Brodhead.

The largest district conference of social work ever held in America was conducted Oct. 27 to 29 in Polk county in the little town of Amery. It was attended by 781 registered delegates of whom 584 were from out of town; 97 of them came from one small town, Clear Lake, a few miles away and 59 towns were represented. The district covered was a rural community of four counties not one of them containing a town larger than 5,000 inhabitants, and yet the attendance was far larger than the attendance at state-wide conferences of other states.

Dr. W. M. Gratiot and Mrs. Gratiot have returned to Mineral Point after a four-weeks visit in California. While in California the doctor took the examinations before the state board of examiners and has been granted a license to practice in that state.

Dr. H. B. Sears, Beaver Dam, has been appointed by the state board of health as deputy state health officer for the northwest Wisconsin district, with headquarters at Eau Claire. He has been a practicing physician at Beaver Dam for 30 years. Dr. Sears succeeds Dr. V. A. Gudex, who has been assigned to the state office in Madison for work in the bureau of communicable diseases. Dr. Gudex will remove to Madison.

Dr. Donald R. Searle, Superior, Wis., left November 1, 1921, for Europe, where he will spend one year in post-graduate surgery.

The January Meeting of the Milwaukee County Hospital Staff will be held at the County Hospital, January 5th, 1922, 8 P. M. There will be an interesting scientific program. All physicians of the County are cordially invited to attend.

PROGRAM.

I. Discussion of Staff Business.

II. Presentation of three papers.

Case 1—Cerebellar Glioma with complete history and presentation of specimen and enlarged microscopic slides, by Dr. Margot, Hospital Pathologist.

Case 2—Tuberculosis of the sacro-iliac joint complicated by peritoneal tuberculosis.

Complete case history and X-ray plates showing lesion in sacro-iliac joint and peritoneal tuberculomas, presented and discussed by Pathologist.

Case 3—The Nicerian bacteraemia with affected heart valve and other focal infections. Pathological specimens exhibited after complete case history, by Interne.

Case 4—Exhibition of radiographs of ununited fractures, Dr. Eugene Smith.

DEATHS

Dr. Thomas J. O'Brien, a practicing physician at St. Nazianz for more than thirty years, died November 13, 1921, at his old home in Eden, Wisconsin, after an illness of over a year. Dr. O'Brien was born in Eden in 1869 and graduated from Rush Medical College in 1890. He practiced in Dotyville for three years, then removed to St. Nazianz where he made his home. He was a

member of the Manitowoc County, Wisconsin State and American Medical Associations.

Dr. George F. Colter, Marinette, died at his hime, November 12, after an illness of several months. Dr. Colter was born in Fredericton, New Brunswick, in 1864. He attended the University of New Brunswick, after which he entered the medical school of the University of Pennsylvania, graduating in 1888. He practiced in New Brunswick for a year and then located in Marinette where he resided until the time of his death.

Dr. Arick Sutherland, a practicing physician at Brodhead for more than twenty years, died suddenly at his home, November 10. Dr. Sutherland was born in 1855 and graduated from the Milwaukee Medical College in 1900.

In Memoriam

DR. C. D. CONKEY

At the Nov. 16, 1921, meeting of the Interurban (Duluth-Superior) Academy of Medicine, the following appreciation of Dr. C. D. Conkey was read by Dr. T. H. Shastid, of Superior. Dr. Conkey (who at the time of his disease, was well known throughout the Northwest) was the first physician in north Wisconsin to limit his practice exclusively to the eye, ear, nose and throat.

Mr. President, Members of the Interurban Academy of Medicine:

Eight years ago, I removed from my home in Illinois to Superior, Wisconsin, being, as was then supposed, a hopeless invalid. For a long time after that event I was indeed very sick. Then, merely by chance, I formed an acquaintance with your old comrade, Dr. Conkey. The Doctor, being appealed to concerning my condition, diagnosed my case correctly, operated, cured my chief difficulty—suppuration of the maxillary antrums—and saved both my sight and my life. The acquaintance, thus begun, strengthened into friendship—a friendship which continued uninterrupted until rudely broken by the stern hand of death. Will you not, therefore, accept it as in some degree fitting that I, who am so deeply indebted to our old friend, should bring before you my ineffectual endeavor at an appreciation of his character and life.

Charles Dewitt Conkey was born at Pontotoc, Miss., Dec. 1, 1856. His childhood was passed amid the fragrance of the magnolia and the wild rose, for he was a great lover of nature even in his tender years. Before the age of seven, indeed, he had formed the habit of seeking out the pleasant places where flowers were and the great southern trees. His love of nature remained with him till the day of his death. At the age of nine, Charles removed with his parents to Appleton, Wis. Here he soon joined the Presbyterian church, of which he was ever after an active member. When he had received his high-school diploma, he decided to follow his father's occupation—that of school teaching. And he did indeed teach school, though only for a single year. Then he entered Lawrence College, at Appleton Having completed at Lawrence the first two years in arts and sciences, he migrated to Rush Medical College, Chicago. From this institution he received his degree in 1882. For the next eight years the Doctor practiced general medicine at Larimore, N. D. Then, in 1889, he studied the eye, ear, nose and throat at the New York Post Graduate Medical School, and in 1890 located in West Superior, now Superior, Wis. He was the first physician in the northwest part of the state to confine his practice entirely to ophthalmology and oto-laryngology. To Superior, Dr. Conkey restricted himself for fifteen years, for three years of which time he was a partner with Dr. Detling. In 1905, however, he opened a supplementary office in Duluth, and for about ten years, divided his time equally between Duluth and Superior. Then he became a member of the Duluth Clinic, in which institution he remained as oculist and aurist in conjunction with Dr. Winter, for five years, devoting all his hours of practice to Duluth but keeping his place of residence in Superior.

At Larimore, N. D., on Nov. 4, 1886, Dr. Conkey had married Mary Ellen Taylor. By her he had had two children—Charles Dewitt and Ruth Taylor, Conkey. At the end of the period above-mentioned, which the Doctor spent in the Tuohy-Hirschbec Clinic, he was obliged, by reason of his wife's rapidly failing health, to select some less rigorous climate than that which prevails at the Head of the Lakes. He, therefore, only two short months ago, left with his wife and daughter for Los Angeles, California, meaning to make that place his home. There he bought a house, rented and equipped an office. Just before he left Superior he was given a banquet and a keepsake by the members of the Douglas County, Wis., Medical Society—a fact which has now become a source of especial satisfaction to those who gave.

In 1910, Dr. Conkey had undergone, in Duluth, a gallstone operation. The wound had not healed well, and, a few weeks after the operation, the Doctor, while bowling, produced a hernia through the operation scar. From that time on, he had worn a truss. After moving to Los Angeles, the Doctor and his wife, on Labor Day, had spent some ten or eleven hours in motoring, and that night, the Doctor, feeling great pain, arose, and discovered that the hernia had very much increased in size. Next morning, accordingly, he entered a hospital, and, the day thereafter, submitted to an operation. For a time, all seemed to be well, but, the following forenoon, at eight o'clock, the Doctor's heart began to fail, and, in the evening, he died. This was on September 8, 1921. It will be a pleasure to the members of this Academy to know that Dr. H. J. O'Brien and Dr. Detling, both formerly of Superior, and the latter at one time a partner with Dr. Conkey, were present at the operation, and indeed were with him practically all the time until the end. Dr. Conkey, though suffering considerable pain, spoke often of his old friends in Superior and Duluth. He was also frequently engaged in forming plans for the further enjoyment of natural scenery in and about Los Angeles.

The funeral was held, with perhaps, an accidental appropriateness, at the little church of the Flowers. The interment was at Forest Lawn Cemetery, near Los Angeles. So short a time has elapsed while all these recent things were happening, that we who knew Dr. Conkey well, seem still almost to hear his voice about us, still to behold him moving to and fro at his daily tasks. It appears indeed only about five minutes since I saw him, waving at me a rake and hoe and calling out cheerfully, "Now for the garden!"

Dr. Conkey's personal appearance needs no detailed description to this academy. He was 5 feet 9 inches high, a little inclined to stoutness, with close-cropped white hair and no beard. A man of fine physique, his capacity for toil knew almost no end.

The Doctor's facial expression was always one of calm thoughtfulness and gentleness. Nor did this expression in the least belie his true character. For the keynotes of that character were simply these—calm thoughtfulness and gentleness. Dr. Conkey I never knew to be excited. Nothing ever carried him away, ever swept him off his feet, lured him into violence. Yet, cautious in occupying a position, once he occupied it he held to it tenaciously.

Perhaps this calm, placid, unhurried nature explains to some extent his excellence as a diagnostician. At all events, in the realm of diagnostics it was that Dr. Conkey excelled particularly. I have sometimes thought that he could almost smell a disease out. He used to carry in his memory, as now I recall, list after list of points on differential diagnosis. And over almost any diagnostic problem he would ponder with a patience that is seldom seen. I behold him once again, as he sat before me on the day he diagnosed my own particular case: cross legged, a roentgen picture uplifted in his left hand, pondering, pondering. At length said he, "Pus"—one brief, monosyllabic conclusion, but, for me, an open sesame to incredible health and happiness.

Dr. Conkey was a man of great faith: faith in his fellow men, faith in his profession, faith in his personal friends, his lodge, his church, his God. He used to say that the best way to help any one was to believe in him. So he believed in every person steadfastly, till the evidence was overwhelmingly against that man. Even then he believed more or less. He did not seem able to give up wholly his confidence in any one. This great faith in humanity seems in some sort to have been connected with his gentleness and tendency to ponder.

In turn, out of his great faith in humanity grew his wish to serve. Service and love were, in fact, his watchwords. To every patient, rich and poor alike, he endeavored to be of the utmost use. Not infallible, yet, in that calm, placid unassuming manner, his whole soul went to his professional activities.

Out of his gentleness also grew a very striking characteristic of this man—his charitableness toward his brethren in the healing art. Wholly independent as he was in the formation of his opinions, he could not easily be hurried into prejudice. Over and over, when I have heard some fellow physician castigating another in that other's absence, Dr. Conkey has entered at least some plea in the absent one's defense. I have even heard him do this when the absent one was a bitter enemy of his own. His nature was too gentle, too full of placid discrimination for him to fail to see that, in almost every controversy, there must be a second side.

Dr. Conkey, as general practitioner and as specialist, practiced medicine for almost forty years. Forty years of service to his Creator and to his fellow man: forty years filled with thrilling experiences, light and shadows, ups and downs—the lot of the doctor, specialist or general practitioner, everywhere. And now the places that knew him will know him no more. His calm bearing, quiet and gentle dignity, splendid physique, intense application, independence of spirit, and charity toward all, have become but a shadow, a mere memory, a name.

This, gentlemen, is a very strange world. The doctor who saved my life has lost his own. He it is that lies in the darkness of the grave, while I whom he rescued am still in the light and in life. Only a few short weeks ago, as now it seems, the Doctor was standing before this very body, reading a contribution, as now do I. Strangely enough, the name of that paper was "Diseases of the Maxillary Antrum." Strongly tempted was I, on that night, when he had finished reading, to arise and acknowledge before you my great indebtedness to this excellent man and skilful ophthalmologist and rhinologist. But I feared that I might embarrass him. Little did I dream how soon without the least confusion to the Doctor. I might stand before you, lifting my humble voice in a strangely inadequate eulogy of his character and life.

Life, gentlemen, life and death are both strange, incredible. We cannot at all understand them. We only know that, for a season, one and another comrade is walking beside us: we see him, we listen to his voice; then, either with solemn warning or without, he leaves the road we were happily treading together, waves goodbye, and is gone along some path of no return. At least so far as this life is in question, there can be no return. Let us hope that, under the infinite mercy of a loving God, and in the great hereafter (which cannot be one whit more wonderful or miraculous than this life) all paths shall come together again, all friendships be renewed.

MARRIAGES

Dr. Iver Stoland, Eau Claire, to Miss Nellie Kleppen, Eau Claire, November 1, 1921.

LUMBOSACRAL REGION.

Archer O'Reilly, St. Louis (*Journal A. M. A.*, Oct. 29, 1921) reports further on his study of backache and anatomic variations of the lumbosacral region, based on 300 cases and the dissection of cadavers. He considers it possible that as a result of some strain there might be an injury to the ligaments running from the tip of the transverse process to the crest of the ilium, resulting in definite back symptoms, or that some untoward motion between the fifth lumbar and the first sacral might result in irritation at this point, resulting in back symptoms.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

1920 Collected Papers of the Mayo Clinic, Rochester, Minn. Octavo of 1392 pages, 446 illustrations. Philadelphia, and London: W. B. Saunders Company. Cloth, $12.00, net.

Diseases of the Skin. By Henry W. Stelwagon, M. D. Ninth Edition revised with the assistance of Henry K. Gaskell, M. D., attending Dermatologist to the Philadelphia General Hospital. 1313 pages, 401 text illustrations and half-tone plates. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $10,00, net.

History of Medicine, with Medical Chronology, Suggestions for Study and Bibliographic Data. By Fielding H. Garrison, M. D., Lt.-Colonel, Medical Corps, U. S. Army, Surgeon General's Office, Washington, D. C. Third Edition, Revised and Enlarged. Octavo of 942 pages. 257 portraits. W. B. Saunders Company, Philadelphia and London, 1921. Cloth, $9.00, net.

The Spleen and Some of Its Diseases. By Sir Berkeley Moynihan, Leeds, England. 129 pages, 13 full page diagrams, Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $5.00, net.

Surgical Anatomy. By William Francis Campbell, M. D., Surgeon-in-Chief at Trinity Hospital, Brooklyn, N. Y.; Sometime Professor of Anatomy and Professor of Surgery, Island College Hospital. Third Edition, Revised. 681 pages, 325 original illustrations. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $6.00, net.

Bacteriology — General, Pathological and Intestinal. By Arthur Isaac Kendall, B. S., Ph. D., Professor of Bacteriology, Northwestern University Medical School, Chicago. 2nd edition. 700 pp., 99 engravings, 8 color plates. Philadelphia and New York: Lea & Febiger. 1921. Price, $6.00.

Diseases of the Digestive Organs with Special Reference to Their Diagnosis and Treatment. By Charles D. Aaron, Sc. D., M. D., F. A. C. P. Professor of Gastroenterology and Dietetics, Detroit College of Medicine and Surgery. 3d edition, revised. Philadelphia and New York: Lea & Febiger. 1921. Price, $10.00.

Insanity and Mental Deficiency in Relation to Legal Responsibility.—A Study in Psychological Jurisprudence. By Wm. G. H. Cook, LL. D. (London). New York: E. P. Dutton Co. 1921. Price, $4.00.

Diseases of the Skin. By Richard L. Sutton, M. D., Professor of Diseases of the Skin, University of Kansas School of Medicine, Dermatologist to the Christian Church Hospital. 969 illustrations, 11 colored plates. Fourth edition, revised and enlarged. St. Louis: C. V. Mosby Co. Price, $9.50.

The Glands Regulating Personality, A Study of the Glands and Internal Secretions in Relation to the Types of Human Nature. By Louis Berman, M. D., The MacMillan Co., New York. 1921.

Mysticism, Freudianism and Scientific Psychology. By Knight Dunlap, Professor Experimental Psychology, Johns Hopkins University. St. Louis: C. V. Mosby & Co. 1920. Price, $1.50.

The Practical Medicine Series. Vol. II. General Surgery. Edited by Albert J. Ochsner, M. D., LL. D. Series 1921. Chicago: The Year Book Publishers. Price, $2.50. **Vol. III. Eye, Ear, Nose and Throat.** Edited by Wood, Andrews and Shambaugh. Price, $1.75.

Nostrums and Quackery. Vol. II. Illustrated. 832 pp. Chicago: The American Medical Association. Price, $2.00.

Essays on Surgical Subjects. By Sir Berkeley Moynihan, K. C. M. B., C. B., Leeds, England. Octavo of 253 pages, illustrated. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $5.00 net.

Taboo and Genetics. A Study of the Biological, Sociological and Psychological Foundation of the Family. By M. M. Knight, Ph. D., I. L. Peter, Ph. D., and Phyllis Blanchard, Ph. D. Moffat, Yard & Co., New York. 1920.

A Laboratory Handbook for Dietetics. By Mary Swartz Rose, Ph. D., Columbia University. New York: The MacMillan Co. 1921.

Studies in Dreams. By Mary Arnold-Forster. With a foreword by Morton Prince, M. D. New York: The MacMillan Co. 1921.

Religion and the New Psychology. A Psycho-analytic Study of Religion. By Walter Samuel Swisher, B. D. Boston: Marshall Jones Co. 1921.

The Elements of Practical Psychoanalysis. By Paul Bousfield, M. R. C. S. New York: E. P. Dutton Co. 1920. Price, $5.00.

Nerves and the Man. A Popular Psychological and Constructive Study of Nervous Breakdown. By W. Charles Loosmore, M. A. New York: Geo. H. Doran Co. 1921. Price, $2.50.

A Study of Women Delinquents in New York State. By Mable Ruth Fernald, Mary Holmes Hayes and Almena Dawley. The Century Co., New York. 1920.

Mind and Its Disorders. A Textbook for Students and Practitioners of Medicine. By W. H. D. Stoddard, M. D., F. R. C. P. Third Edition, illustrated. P. Blakiston's Son & Co., Philadelphia. 1921. Price, $7.50.

BOOK REVIEWS

1920 Collected Papers of the Mayo Clinic, Rochester, Minnesota. Octavo of 1392 pages. 446 illustrations. W. B. Saunders Co., Philadelphia and London. Cloth, $12.00, net.

Volume twelve of the Collected Papers of the Mayo Clinic surpasses even former excellent yearly editions, in size, publishers' makeup and quality. The present volume comprises about 1400 pages and the different articles are richly illustrated by half-tones, schematic drawings and color plates. Sixty associates of the Mayo Clinic and the Mayo Foundation for Medical Education and Research have contributed to the 1921 volume.

The papers are arranged under general headings,

such as Alimentary Tract; Urogenital Organs; Ductless Glands; Heart; Blood; Skin and Syphilis; Head, Trunk and Extremities; Nerves; Technique, and General. The reviewer has always written enthusiastically of these yearly volumes of collected papers from Rochester but is frank in saying that the present issue surpasses all others in every respect. It is a postgraduate course in itself and will prove a joy to anyone interested in the newer advances in scientific medicine and surgery.

Diseases of the Skin. By Henry W. Stelwagon, M. D. 9th edition, revised with the assistance of Henry K. Gaskill, M. D., attending dermatologist to the Philadelphia General Hospital. 1313 pages. 401 illustrations. W. B. Saunders Co., Philadelphia and London. 1921. Cloth, $10.00, net.

The ninth and last edition of Dr. Stelwagon's popular work comprises a volume of nearly 1400 pages with 401 text illustrations and 29 colored and half-tone plates. It is hardly necessary to say anything of the high regard and deep esteem in which the late Dr. Stelwagon has been held by the profession of America. In starting the revision of a work which has probably been the most popular text on the subject, he realized his strength would hardly be equal to the strain and secured the assistance of Dr. Henry K. Gaskill, attending dermatologist to the Philadelphia General Hospital. As expected, the work proved too great for Dr. Stelwagon and, though he did much toward revising and bringing up-to-date the present edition, the world lost one of its most capable writers and greatest of teachers of dermatology before it was completed. Dr. Gaskill has, however, admirably carried out the revision as planned and outlined by its famous author.

A few of the older illustrations have been eliminated and 74 new ones have been used. Descriptions of several conditions which are rare and yet may be observed with more or less frequency have been incorporated. The general arrangement of the work has not been changed and shows the scheme Dr. Stelwagon has so successfully used in his teaching in the past. There is, of course, no better text if, indeed, any equal, and many admirers of Dr. Stelwagon will want this, the latest edition of his work, planned and molded by so gifted a teacher.

History of Medicine, *With Medical Chronology, Suggestions for Study and Bibliographic Data.* By Fielding H. Garrison, M. D., Lt. Col. M. C., U. S. Army, Washington, D. C. 3d edition, revised and enlarged. 942 pages. 257 portraits. W. B. Saunders Co., Philadelphia and London. 1921. Cloth, $9.00, net.

Dr. Garrison's third edition of his famous history of medicine is indeed welcome to the reviewer's table. One can unhesitatingly recommend it to every physician, not only because of the need of every practitioner to know something of the history of his profession, but because there is no other work like it.

It was originally published in 1913 and attracted at that time and since as much attention as any work relating to medicine published in the last decade. Those who have not added Garrison to their library should do so at this time—there is no object in delay as there will be no further revision of the work for some years to come.

This volume is a work of nearly 1,000 pages, which begins with the forms of ancient and primitive medicine, carries the reader through Egyptian, Sumarian, Oriental, Greek, Roman and Medieval medical history. Then the Renaissance, the seventeenth century, the eighteenth century and the modern period up to the present time. It is richly illustrated and the charm of the history told has an irresistible appeal to any medical man.

Diseases of the Skin. By Richard L. Sutton, M. D., Professor of Diseases of the Skin, University of Kansas School of Medicine; Former Chairman of the Dermatological Section of the American Medical Association; Assistant Surgeon, United States Navy, Retired; Dermatologist to the Christian Church Hospital. 969 illustrations, 11 colored plates, Fourth Edition, Revised and Enlarged. C. V. Mosby Company, St. Louis. Price, $9.50.

A good text for student and practitioner, profusely illustrated with excellent cuts many of which are colored. The clinical and serological study of syphilis is discussed with unusual completeness. Other research work done in constitutional diseases which produce affections of the skin have been brought down to date. The text is replete with references to foreign and domestic literature which should be of great value to students and practitioners who may desire to exhaustibly investigate a particular subject. The chapters on epithelioma, carcinoma and sarcoma are particularly well illustrated and the differential diagnosis of the different forms of lesions is described in detail. The writer has recently reviewed a number of modern texts on diseases of the skin and finds the above captioned text to be a better reference book than any of the others.

Insanity and Mental Deficiency in Relation to Legal Responsibility—*A Study in Psychological Jurisprudence.* By Wm. G. H. Cook, LL. D. (London). E. P. Dutton Co., New York. 1921. Price, $4.00.

Dr. Cook's work, which is a thesis approved for the degree of Doctor of Law in the University of London, is the result, he tells us, of the examination of upwards of 200 leading cases and of the study of the law of many foreign countries. In this work, he makes possible a restatement of the English laws of insanity and mental deficiency in relation to civil responsibility. Its various chapters consider such subjects as Mental Deficiency in Relation to Tort; Mental Deficiency and the Law of Contract; Mental Deficiency and Marriage; General Insanity and Divorce; Testamentary Capacity in Mental Deficiency, and Evidence of Insanity.

While written from the point of English jurisprudence, it will prove a most valuable and interesting book for psychiatrists, jurists and those social workers interested in criminal responsibility. The work has our unqualified approval.

The Spleen and Some of Its Diseases. By Sir Berkeley Moynihan, Leeds, England. 129 pages. 13 full page diagrams. W. B. Saunders Co., Philadelphia and London. 1921. Cloth, $5.00, net.

This work is the Bradshaw lecture of the Royal College of Surgeons of England in 1920. Since the war especially, the gifted author needs no introduction to the American medical public. This work on the spleen is a classic which will live for many years. The spleen —a much neglected organ in the study of the etiology of disease—may now justly claim a real measure of attention and Sir Moynihan has given us a work of more than passing importance.

It is beautifully printed on a special grade of paper and richly illustrated with original drawings and color plates.

Bacteriology—General, Pathological and Intestinal. By Arthur Isaac Kendall, B. S., Ph. D., Professor of Bacteriology, Northwestern University Medical School. 2nd edition. Lea & Febiger, Philadelphia and New York. 1921. Price, $6.00.

The second edition of Dr. Kendall's work is a volume of some 700 pages, well illustrated with 99 engravings and eight color plates. It is divided into five general sections, namely, General Bacteriology; Pathogenic Bacteria; Higher Bacteria, Moles, Filterable Viruses and Diseases of Unknown Etiology; Gastro-Intestinal Bacteriology, and Applied Bacteriology.

Entire sections of the former editions have been rewritten and extensive changes and additions to nearly every chapter have been made. References in appropriate places acknowledge the source of newer information and of extensive monographs which would be of interest to workers in special fields. The first edition of Dr. Kendall's work received a warm welcome and approval by those best qualified to judge its value and the improvements made in the present edition make it one of the most valuable texts on the subject. It is most highly recommended.

Diseases of the Digestive Organs, *With Special Reference to their Diagnosis and Treatment.* By Charles D. Aaron, Sc. D., M. D., F. A. C. P., Professor of Gastro-enterology and Dietetics, Detroit College of Medicine and Surgery. Third edition, thoroughly revised. Lea & Febiger, Philadelphia and New York. 1921. Price, $10.00.

No subject can be of more interest to the general practitioner as well as to the internist, surgeon or specialist than the diseases of the digestive organs, for on no subject is the practitioner more frequently consulted. While realizing that personal instruction is the ideal teaching method, the author has given a work to the busy practitioner whereby he can acquire through its text and illustrations an excellent knowledge of the diagnosis and treatment of these diseases. His work is sensibly and plainly writen to meet the demands of the general practitioner, anxious for essentials but with limited time.

Much new material has been incorporated in Dr. Aaron's new edition and several new colored plates, Roentgenograms and engravings added. As in other editions, the plan of the work shows the physiologic path of the digestive tract, beginning with the diseases of the mouth and taking up in succession the pharynx, esophagus, stomach, liver, gall bladder, bile ducts, pancreas, small intestine, appendix, cecum, colon, sigmoid flexure, rectum and anus. The work is richly illustrated and the colored plates are exceptional. The chapters devoted to laboratory work are alone worth the investment to the general practitioner.

Surgical Anatomy. By William F. Campbell, M. D., Surgeon in Chief to Trinity Hospital, Brooklyn, N. Y. Third edition, revised. 681 pages. 325 illustrations. W. B. Saunders Co., Philadelphia and London. 1921. Cloth, $6.00, net.

In the preface to his third edition, Dr. Campbell states that no teacher can impart or student assimilate all the details of anatomy; that the facts must be sifted and comparative values fixed and the reasons for their acquisition demonstrated by directing attention to the practical problems with which they are associated. A reading of his work assures us he had this always in mind, for anatomy—ordinarily dry and uninteresting—is made most fascinating reading. Anatomical facts are made the solution of practical problems and the reader is at all times impressed with the clinical value of the subject matter under consideration.

The third edition of Dr. Campbell's splendid work has been thoroughly revised and many new illustrations added. An important contribution has been added to the anatomy of the hand and other additional data inserted to enhance the value of the original text. It is a work of about 700 pages and is wonderfully illustrated throughout.

The Glands Regulating Personality, *A Study of the Glands and Internal Secretions in Relation to the Types of Human Nature.* By Louis Berman, M. D., The MacMillan Co., New York. 1921.

This is a most interesting and unique work, approaching important problems from a new angle and is "something different".

The author attempts to show why individuals differ, why some succeed and others fail, why we are divided into types and why man's individuality is controlled by the quality and quantity of internal secretions acting in him. While many of the author's conclusions and deductions must be considered speculative in the light of our present day knowledge of the internal secretions, his association in the department of biological chemistry at Columbia University assures us of his knowledge of the subject, and there is a convincing quality in what he writes. It is an absorbing book which is well worth while.

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Green Bay

TREATMENT OF MIGRAINE AND OTHER TYPES OF HEADACHE.

Thomas R. Brown, Baltimore (*Journal A. M. A.*, Oct. 29, 1921) believes that in the largest group of cases of headache it is excessive intake of carbohydrate food, or rather, an intake of carbohydrate food in excess of the body's ability to consume it thoroughly, that plays the largest rôle in those headaches associated with dietetic error. In certain cases the headaches are typical migraine, many are atypical, many are bilious headaches (so common in the South, and in which the patients have found that purgation and starvation often bring rapid relief of symptoms) and some are cases of almost constant or very frequent headaches, often diffuse, and not hemicranial. In many of these cases the patient has noted that the headache follows excessive intake of carbohydrate food, usually sugar in some form, and some have noted that if this is followed immediately by a large amount of alkalis, the headache can be aborted. Brown's treatment has been practically that suggested by Francis Hare—two or three weeks of a diet consisting largely of proteins, fats, greens and acid fruits, with absolutely no sugar or starch except that found in the foregoing foods, in other words, practically antidiabetic diet, trying to keep the weight constant by giving considerable amounts of butter, cream and olive oil, and later adding a very small amount of carbohydrate, one or two slices of bread or toast, one or two potatoes or a small plate of oatmeal daily, and keeping the patient on this diet or a diet even more restricted or somewhat less restricted in starches, according to its effect, for a long period of time, sometimes indefinitely. Headaches associated with the intake of animal protein food are next in point of frequency to the group just discussed. There is a very large amount of clinical evidence in favor of this theory; in many cases the patients have noted that, after an excess of animal protein food, headache is likely to occur. In certain cases of migraine, patients have obtained great relief from a vegetarian diet, while in other cases certain special proteins seem to be peculiarly implicated, such as eggs or milk or a combination of the two, and in one of my cases, ham. In many of these cases the patients themselves have recognized the relationship between food and headache and have shaped their dietary accordingly. Other causes undoubtedly play a part—nervous influences, fatigue, climate, etc. In the treatment of this group of patients, the most satisfactory results have been obtained by the complete removal of all animal protein foods from the dietary for a certain length of time, then the very cautious addition of small amounts of various proteins. In some cases of intense migraine it has been necessary to keep the patient permanently on a purely vegetarian diet. In Brown's series of fifty or more cases, carbohydrates seemed to have played the predominant rôle in the largest number of cases; animal-protein food in almost as many; special foods, notably sugar or eggs in a very few cases, while in an occasional case the headache might be regarded as a definite expression of intestinal toxemia or bacteremia or of an error in purin metabolism. That some disturbance in liver function plays a part in these headaches is suggested by the fact that there is in some cases a temporary enlargement of the liver during and after the acute symptoms. While it is not always possible to determine to which special form of dietetic error the individual headache may be ascribed, nevertheless in many cases a very careful clinical analysis, supported by certain laboratory tests, offers a clue as to the materia peccans, carbohydrate, animal-protein, or purin-rich food as the case may be. In cases in which it is absolutely impossible from the clinical evidence to incriminate any special food or foods, it is wise to place the patient first on a carbohydrate-free diet for a considerable period of time, and if this proves unsuccessful, then on an animal-protein-free diet. In certain cases such treatment will bring about a very marked improvement in symptoms, in a very few, apparent clinical cure, although, of course, in a large number of cases no effort whatsoever. Finally, in this group of cases the treatment of which is peculiarly unsatisfactory, by many regarded as almost hopeless, this point of view is not justifiable, unless one realizes that in certain of these cases diet unquestionably plays a rôle, and that a proper recognition of this fact should manifest itself in the appropriate dietetic therapy.

SHEPPARD-TOWNER BILL IN THE HOUSE.

Dispatches from Washington indicate that the Sheppard-Towner Bill (S. 1039) will soon come up for consideration in the House of Representatives. It has already passed the Senate. The House Committee on Interstate and Foreign Commerce, to which the bill was referred, has been asked to report on it as soon as possible. As has been repeatedly stated in previous issues, The Journal is opposed to this measure because (1) the principle of federal state aid as a means of financing public health work is an unsound financial policy; (2) public health work, except those activities which are clearly national in character, is essentially a function of the state and local government and should be supported out of state and local funds; (3) there are no reliable statistics by which it can be proved that the United States stands seventeenth in maternal death rate as the advocates of the measure claim; (4) the measures provided in the bill will not afford an effective remedy for existing conditions, and (5) and most important, if the federal government intends to inaugurate activities for the care of maternity and infancy or for any other public health measure, such work should be delegated to the United States Public Health Service and not to a bureau of the Department of Labor. The Hon. Samuel E. Winslow of Massachusetts is chairman of the committee to which the bill has been referred and his committee is interested in knowing how the physicians of the nation stand on the measure. Physicians who are interested should write to Mr. Winslow, expressing their views on this question. If the medical profession does not want to see this bill passed, now is the time to say so.—*Jour. A. M. A.*, Oct. 29, 1921.

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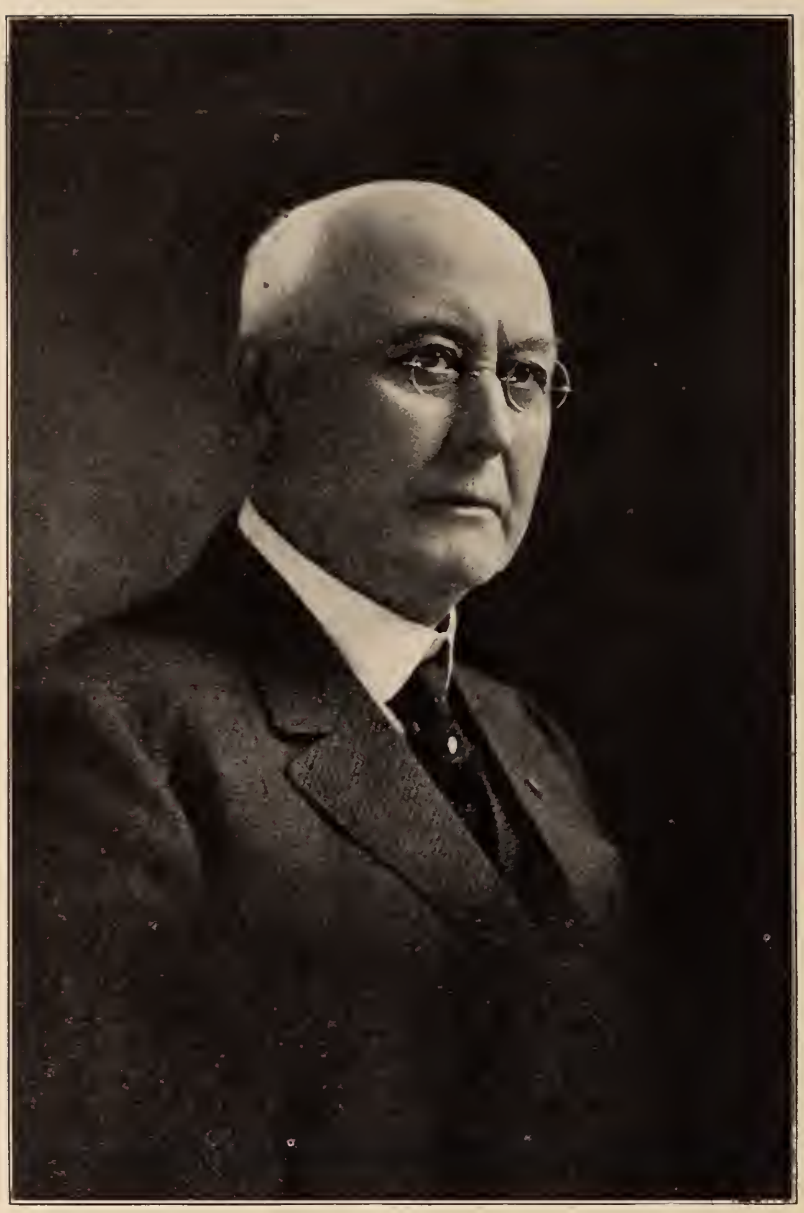

SIDNEY S. HALL, M. D.
RIPON, WISCONSIN
President, State Medical Society of Wisconsin, 1922

The Wisconsin Medical Journal

Volume XX | Milwaukee, January, 1922 | Number 8

TRANSACTIONS

OF THE

SEVENTY-FIFTH ANNUAL MEETING

OF THE

STATE MEDICAL SOCIETY OF WISCONSIN

AT MILWAUKEE, SEPTEMBER 7, 8 and 9, 1921

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1921

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TRANSCRIPT OF PROCEEDINGS OF HOUSE OF DELEGATES.

SEPTEMBER 6-9, 1921.

SESSION TUESDAY EVENING, SEPT. 6, 1921, 8 P. M., GOLD ROOM, HOTEL WISCONSIN, MILWAUKEE.

Meeting called to order by the Acting President, Dr. M. A. McGarty, La Crosse.

THE PRESIDENT: We will dispense with the roll call of the delegates, as the members are registering at this time.

There is a committee to be appointed on reports of officers and committees, to consist of three men, and the report is to be handed in on Thursday of this week. I will appoint on that committee Dr. Dearholt, Dr. Fiedler and Dr. Lorenz. Dr. Sleyster will explain the duties of the committee.

SECRETARY SLEYSTER: This committee was authorized by the House of Delegates two years ago. It had been found that the reports of the officers and the various committees were practically neglected, no one had taken the initiative to look after them or pay much attention to them. As a result, many valuable suggestions in these reports were ignored, and things went by to which attention should have been paid. It will therefore be the duty of this committee to review the different reports and to bring in any resolutions or suggestions which may be suggested by them.

THE PRESIDENT: We will now hear from Dr. Edward Quick, chairman of the Committee on Public Policy and Legislation, who will present the report of that committee.

The report of the Committee on Public Policy and Legislation was presented by the chairman, Dr. Edward Quick, Milwaukee, as follows:

REPORT OF COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

To the House of Delegates:

Your committee has indulged in some activity during the past year which related principally to the various bills before the Wisconsin Legislature. A number of the bills introduced touched in one way or another the interest of the medical profession and the public health.

There is a new law relating to the registration of nurses. The bill was introduced as No. 121 S, and appears in Chapter 356 Laws of 1921.

A Committee on Nursing Education is created and is composed of the Director of Nursing Education, two representatives of the Wisconsin State Nurses' Association, two representatives from the Wisconsin State Hospital Association, one from the Wisconsin Conference of Catholic Hospitals, one from the State Medical Society, and one from the Public Health Nursing Bureau of the State Board of Health.

Registration of nurses is taken from the medical examining board and placed under the State Board of Health.

Registration becomes compulsory within the State after January, 1922, and "It shall be unlawful hereafter for any person to practice or attempt to practice, as a registered, trained, certified or graduate nurse without a certificate from the State Board of Health." This does not apply to practical nurses or trained attendants.

The educational qualifications for registration are at least one year High School, and graduation from an

accredited School for Nurses, giving at least a course of not less than two years. There is a waiver until September 1, 1921, whereby registration may be obtained without examination upon application, provided that the applicant shall have graduated before September 1, from an accredited School for Nurses who at the time of graduation shall have received at least two years' training.

Reciprocity is provided and will be granted to any applicant who is registered under the laws of another State having requirements which the State Board of Health determines to be at least the equivalent of the requirements of this State.

There will be a Board of Nurse Examiners under the State Board of Health of which Board the Director of Nursing Education will be a member.

Bill 246-S, introduced by Senator Skogmo, provided that no pupil or minor should be compelled to submit to medical examination or treatment, whose parents or guardian objects to same. The provision of this bill, as can readily be seen, would have abolished school medical inspection and with it the control that this inspection service exercises over the spread of contagious diseases in schools. Fortunately, this bill was defeated.

Bill 156-A, an anti-vaccination bill, was likewise defeated.

Unfortunately, a very important measure incorporated in Senate Bill 348 was lost, on the other hand. This bill, which provided an amendment to the Medical Practice Act which essentially meant the application of the same educational and professional standards to all who practice the healing art in the State of Wisconsin, and which would have, in particular, regulated the practice of chiropractors, was finally lost after it had been successfully carried through the Assembly as well as the Senate.

At this session of the Legislature, the chiropractors were very active. After the bill amending the Medical Practice Act passed the Senate and was sent to the Assembly, the chiropractors had a bill introduced creating a licensing board of their own. They were well and ably represented at Madison and left no stone unturned to acquire their ends. Their bill was finally lost in committee.

Many members of the Profession have responded promptly to the requests of your Committee for help for and against bills in the Legislature. All of these we wish to thank. However, it seems to your Committee that the medical profession as a whole has a rather indifferent interest in these legislative matters which pertain to the Medical Profession and the Public Health. It seems to be the thought of the rank and file that the legislature may do as it pleases, as our profession cannot really be affected by anything that is done at Madison. In an ideally organized society where the legislators are intelligent and public spirited, it would seem a matter of course that they would seek out the representative members of the Medical Profession for advice in matters pertaining especially to the public Health. They do not do that, however, and we perforce should accept the situation as it really is. Legislation is effected at Madison and probably in all of the other States by Propaganda, by those interested in the legislation. It would probably be well, therefore, for the Medical Profession to organize and maintain representatives in various parts of the State who will always keep an active interest in matters pertaining to the Medical Profession and the Public Health.

It is recommended by your Committee, therefore, that this Legislative Committee be enlarged to include representatives in various parts of the State and that the Chairmanship of the Committee be placed with the paid secretary whose time is largely devoted to the interests of the Medical Profession and matters pertaining to Public Health.

Respectfully submitted,

EDWARD QUICK,

Chairman.

THE PRESIDENT: Is there any discussion of Dr. Quick's report?

DR. FRANZ PFISTER, Milwaukee: Mr. President, I believe that it is wise to enlarge the committee, and that the State Society should contribute more to the work before the legislature than it has done in the past. It seems that almost anybody can get about anything from the legislature, except the medical profession. The reason for this has just been pointed out, and lies in the fact that not enough attention is paid to the work of the legislature. It is stated in the report that the chiropractors have been very active; it does not say that the medical profession was not so, but it can be so understood from the tenor of the report.

There is one phase of legislation that has not been mentioned in this report; and it struck me that it must have been overlooked by the committee; it is the licensing by the state of every one of us for a second time. I have heretofore had a license from the State of Wisconsin to practice medicine and to relieve suffering by all means at the disposal of the medical profession, and I have been practising a number of years along that line. All of a sudden I am told that I have to get a new additional license, I have to get the endorsement of the district attorney, and have to pay $10 to be allowed to prescribe certain medicines. I say the word "medicines" because those men who have prescribed it for drinks do not kick; they are not sore at that law, or because they have to pay the $10; they simply charge a little more and write a few more prescriptions. I am not touched personally. I had not taken out a government license until some time this summer, and I prescribed perhaps 5 or 6 prescriptions, and I can say here that I have not collected a cent for them and did not want to. I believe the state has no right to change our license to prescribe medicines which we already have, or it could with the same right tax you any amount for any one of the drugs you prescribe. It is a case of legal right, justice, and first of all, dignity; it is a case of a previously acquired right that has been taken away from us by the state legislature. I do not enter into the merits or demerits of the so-called Severson Law; I have nothing to do with that; I simply want to say that this particular

part of this law is intended for us to pay the expense for the carrying out of that law, and put on us an additional burden. To my mind the state, having licensed us once before had no right to ask us again to submit to another license on conditions coming within the scope of a previous permit.

I therefore offer a motion that this body here take steps to secure a legal opinion as to whether or not the state has a right to compel the physician to once more present himself to a public officer for a license, pay a specified fee, and to secure a second license upon the one he is already in possession of.

THE PRESIDENT: Is there any further discussion?

Motion seconded.

THE PRESIDENT: Or any further question?

DR. W. F. ZIERATH, Sheboygan: Mr. Chairman, is that a protest against the prescribing of liquor by the doctors, or is it a general protest against medical men being restrained in their activities? Personally, I do not see any use in rehashing this question. It is a matter of law. We did not protest when the Harrison Narcotic Law was put on the statute books, we all recognized that it was a good thing to put in the law. This has already been passed upon by the legislative bodies, and I do not think it would be fitting for the medical profession or add to the dignity of the profession to constantly protest. I think the thing to do first is to find out whether it can be contested in court. What if an attorney does say you can protest it, would you favor our contesting the constitutionality of the law, Doctor, is that the intent of your motion?

DR. PFISTER: I leave that to the Society.

THE PRESIDENT: Is there further discussion?

DR. EDWARD EVANS, La Crosse: Mr. Chairman, I should like to ask a question. I see in the last paragraph of the report of the Legislative Committee that it asks that a change be made in this committee. I constantly protesting. I think the thing to do first is would like to ask at this time if this committee that has just been appointed will take charge of those reports and bring in recommendations to the House of Delegates? If so, there is no need of taking any action on this now.

THE PRESIDENT: Is there further discussion?

DR. FRANZ PFISTER, Milwaukee: I want to answer the question of the Doctor by saying that it is not the intention to knock out the law, it is not a question of prescribing liquor; it is simply a question of whether the state has a right to say, "you must have an additional license for prescribing this or that and we charge you for same privilege;" they can go all the way down the line of materia medica and make us take out a special license for any item. The state would not dare to offer that to the Hod Carriers' Union or to the Washwomen's Union or to anybody but to the medical profession.

THE PRESIDENT: Is there any further question or further discussion? If not, all those in favor of Dr. Pfister's motion will respond by saying "aye"; opposed, "no".

Motion lost.

THE PRESIDENT: The noes have it. We will now have the report of the Committee on Publication, Dr. Oscar Lotz, chairman.

REPORT OF PUBLICATION COMMITTEE.

To the Members of the House of Delegates, State Medical Society of Wisconsin:

GENTLEMEN:

Brevity is said to be the soul of wit. This report will not be witty but it will be brief.

The outstanding feature and the one that must be of interest to all of us in the report of the managing editor, is the increased cost of our Journal. During the year 1919-1920, the cost of each copy sent to members was 10 10/11 cents, while during the past year the cost has been 22 7/10 cents per copy, an increase of over 100 per cent. This increase, as will be seen in Dr. McMahon's report, is largely due to two factors. First, the increased cost of commissions for securing advertising contracts and, second, the tremendous advances in the cost of printing and paper. Our printing bill alone for the current year was $2,776.89 greater than the previous year. The fact that there has been no material increase since last September inspires some hope that the cost of printing has about reached its peak. We have reason to believe that during the coming year there will be a gradual but definite decline in the price of this commodity. The Journal is indeed fortunate in having as managing editor some one who has so strongly at heart the interests of the society, for through his activities in obtaining more advertising copies, the income of the Journal has been increased by over $900.00. A detailed report of the income and expenditures of the Journal is appended.

It seems ambiguous to say much about the editorial department. This speaks for itself twelve months a year, and speaks well each time. It is with pleasure that we note that the editor has succeeded in interesting more of the members of the society in a clinic department. These case histories, especially when accompanied by well rounded discussions, are always of interest and of great educational value.

While it is true that a greater number of men than previous years have contributed to the Journal, conditions are still far from being what they should. We cannot expect our editor to do 95 per cent of the work. The editing and arranging of papers is a big enough job for any man, without his being obliged to beg material for every number. Let's help Dr. Sleyster in this direction and be a bit more liberal in sending him copy.

Respectfully submitted,

OSCAR LOTZ,

Chairman, Publication Committee,

Wisconsin Medical Journal.

Oscar Lotz, M. D., Chairman,
120 Wisconsin Street,
Milwaukee, Wis.

My dear Dr. Lotz:

Enclosed you will please find report showing the earnings, cash receipts, expenses, disbursements and circulation of the Wisconsin Medical Journal during the fiscal year, from August 1, 1920, to August 1, 1921.

In order to make the report more readily comparable to the preceding report, your attention is respectfully directed to the following data:

Total gross earnings from Aug. 1, 1919, to Aug. 1, 1920	$ 4,522.42	
Dividend from Cooperative Medical Advertising Bureau	56.55	4,578.97
Total gross earnings from Aug. 1, 1920, to Aug. 1, 1921	5,373.31	
Dividend from Cooperative Medical Advertising Bureau	111.84	5,485.15

Total expense from Aug. 1, 1919, to Aug. 1, 1920	6,960.99
Total expense from Aug. 1, 1920, to Aug. 1, 1921	10,636.63
Total collections and money received from the State Medical Society during the period Aug. 1, 1919, to Aug. 1, 1920	6,572.44
Total collections and money received from the State Medical Society during the period Aug. 1, 1920 to Aug. 1, 1921	9,020.32
Total uncollectable accounts charged off in the report covering the period from Aug. 1, 1919, to Aug. 1, 1920	None
Total uncollectable accounts charged off in the report covering the period from Aug. 1, 1920, to Aug. 1, 1921	None
Total number of copies forwarded to members of The State Medical Society from Aug. 1, 1919, to Aug. 1, 1920	22,750
Total number of copies forwarded to members of The State Medical Society from Aug. 1, 1920, to Aug. 1, 1921	23,259
Cost of each copy forwarded to members of The State Medical Society from Aug. 1, 1919, to Aug. 1, 1920	10 10/11c
Cost of each copy forwarded to members of The State Medical Society from Aug. 1, 1920, to Aug. 1, 1921	22 6/10c
Increased cost of each copy forwarded to members during the current year over that of the preceding year	11 7/10c

From the above comparison it is seen that the gross earnings during the period from Aug. 1, 1920, to Aug. 1, 1921, exceeded those of the preceding year by $906.18 all of which is creditable to the advertising pages.

That the expense of publishing the Journal during the current year exceeded that of the preceding year by $3,675.64 which is accounted for as follows:

On March 10, 1920, there was an advance of 50% for printing. On September 16, 1920, there was an advance of 25% for printing and there were 509 more journals circulated during the current year than during the preceding year, the combined effects of which were an increase in the printing bill amounting to $2,776.89.

The commissions charged for securing contracts during the current year exceeded those charged under the same item during the previous year by $858.54. This increase is explained by the facts that the rates on all contracts accepted during the last year were advanced from 25 to 40%, that the majority of the contracts accepted during the period covered by this report were entirely new ones and therefore subject to a larger commission, that a number of the contracts were changed from a T. F. to an annual basis in consequence of which the commission charges were made against them upon dates of receipt and many of them will not expire until January 1, 1922, or five months in advance of date of this report.

There was awarded a long overdue increase in the Salary of the Editor's Stenographer which amounts to $180.00 per annum.

It became necessary to purchase a complete set of stencils for the mailing roster at a cost of $105.35 which with other necessary equipment increased this item to $133.42.

The postage was increased $3.25.

There was a reduction in the expenses included under the following sub-headings:

Office Supplies and Expenses	$138.15
Cuts and Drawings	89.76
Miscellaneous General Expenses	46.55
Subscription	2.00

The above data explains the increased cost per copy amounting to 11.7c most of which is chargeable to the increase in the printing item.

In conclusion we are pleased to be able to report that our printer stated that he will be able to make gradual reductions during the next 12 months, the aggregate of which will amount to a material reduction before the end of the year.

Respectfully submitted,

J. P. McMahon,
Managing Editor.

THE WISCONSIN MEDICAL JOURNAL.

PUBLISHING COST STATEMENT.

August 1, 1920, to August 1, 1921.

Income from Publishing:

Advertising Gross Charges	$5,313.14	
Less Discounts	124.29	
Net Income from Advertising		$5,188.85

Subscription	60.17	
Cooperative Medical Advertising Surplus	111.84	
Total Income from Operation		$5,360.86

Publishing Expenses:

Printing	$6,669.44	
Salaries	1,560.00	
Commission for securing advertising contracts	1.862.48	
Cuts and Drawings	9.50	
Mailing Expenses	336.96	
Postage, Editor's and Managing Editor's Office	69.25	
Office Supplies and Expenses	53.80	
Misc. Gen'l Expenses (Incl. Reprints, $21.50)	75.20	10,636.63
Net Cost of Publishing Journal		$5,275.77

To the Members of the State Medical Society:

This deficit of $5,275.77 represents the cost to the State Medical Society of circulating 23,259 copies of the Journal at about 22.6c per copy.

THE WISCONSIN MEDICAL JOURNAL.

FINANCIAL STATEMENT.

August 1, 1920, to August 1, 1921.

Cash Balance August 1, 1920 ..... $ 439.37

Receipts:

State Medical Society	$4,200.00		
Advertising	4,595.39		
Subscription	55.92		
Cooperative Medical Advertising Bureau Surplus	111.84		
Half Tones and Etchings	57.17	9,020.32	
			$9,459.69

Disbursements:

Printing	$5,413.63	
Reprints (Schmitz)	21.50	
Salaries	1,760.00	
Commissions	1,379.75	
Mailing Expenses	328.12	
Postage, Editor's Office	25.00	
Postage, Managing Editor's Office	40.00	
Office Supplies and Expenses	53.53	
Miscellaneous General Expenses	40.45	
Half Tones & Etchings	36.25	$9,098.23
Balance on hand 8/1/21		$ 361.46

Assets.

Office Equipment	$ 176.63	
Cash in Bank	361.46	
Accounts Receivable	2,151.95	
Merchandise	42.12	
		$2,732.16

Liabilities.

Accounts Payable	$2,684.90	
Credit Balances on Advertising Accounts	123.65	
		$2,808.55
Liabilities exceed Assets		$ 76.39

THE PRESIDENT: Is there any discussion of this report?

DR. HOYT E. DEARHOLT, Milwaukee: I should like to ask the chairman if he has any information as to what percentage of the bills receivable are not collectible.

DR. LOTZ: Dr. McMahon, who is managing editor, can answer that question better than I can.

DR. J. P. MCMAHON, Milwaukee: The better part of the bills receivable are collectible, the possible exceptions being for service rendered under so-called trade advertising contracts with hotels which are maintained in the neighborhood of springs, the waters from which have or are supposed to have medicinal properties. We have two such credits which approximate $600.00 and which have been carried on the books as an asset for a number of years in the hope that some member will be able to make use of them as other members have in the past.

DR. DEARHOLT: They are on your books as bills receivable.

DR. MCMAHON: Yes. It costs nothing to carry them and there is a possibility that we may have an opportunity to dispose of them.

THE PRESIDENT: Dr. McMahon, could you tell us where those hotels are, and what they are, so the members would know?

DR. MCMAHON: Yes. The hotel at MudLavia is the largest one, and the other one is at Mount Clemens, Michigan. We have addressed letters to councilors and to certain officers from time to time, calling their attention to these credits. Dr. Patek, a former editor, and chairman of the Publishing Committee has helped more than anyone to use up these credits.

THE PRESIDENT: Is there further discussion of the report of the committee? If not, it will be referred to the committee.

DR. J. P. MCMAHON, Milwaukee: Mr. Chairman, may I make another remark concerning the paragraph in the report containing Dr. Lotz's suggestion that there would probably be a material reduction in printing during the coming year. I have had the matter up a number of times, and at the time the report was written there was a verbal discussion over the telephone about it, which led me to believe that the reduction might be a material one. Since the date upon which the report was written I again communicated with the printers, and secured a written communication to the effect that they may be able to reduce the cost 5 to 10 per cent

when billing for the October issue. However, there is nothing definite about it, for the reason that they are now concerned with a type-setters' strike, and they insist that the greater part of the increased charge is due not so much to the increased cost of paper and labor, but to inefficiency of laborers.

THE PRESIDENT: Is there any further discussion? The report will be referred to the committee for consideration.

The next business is the report of the Committee on Medical Defense, Dr. H. Reineking, Secretary.

REPORT OF COMMITTEE ON MEDICAL DEFENSE.

To the House of Delegates of the State Medical Society of Wisconsin:

Your committee respectfully submits the following report, covering the twelve months ending July 31, 1921:

While this report includes all cases brought to the attention of the committee, there may have been others, both within and outside the membership of the Society, in which our assistance was not requested.

The following cases applied for, and were given, the benefit of our defense service during the period mentioned:

1. Case 134. Improper treatment of fractured wrist. Dismissed.
2. Case 132. Failure to make proper eugenic examination. Open.
3. Case 127. Improper treatment of fractured wrist. Open.
4. Case 124. Improper treatment of fractured arm. Status not known.
5. Case 133. Improper abdominal operation. Open.
6. Case 129. Improper treatment of Colles' fracture. Appeal from verdict for plaintiff, obtained prior to our entry into case.
7. Case 121. Improper treatment of fractured shoulder. No action to date.
8. Case 123. Improper operation on throat. Tried; no report on result.
9. Case 130. Information not furnished. Open.
10. Case 128. Improper treatment of fractured femur. Open.
11. Case 125. Improper treatment of wound. Open.
12. Case 126. Unintentional causing of abortion. Open.
13. Case 122a. Postoperative ventral hernia. No action to date.
14. Case 135. Improper treatment of wound. Open.

How many of these "open" cases will come to trial cannot be foretold; the experience of previous years shows that many cases are dropped without trial or settlement.

The following cases holding over from former years were disposed of in the manner indicated:

Case 40. Action started 1912. Postponed on request of plaintiff; future trial doubtful.

Case 109. Action started 1919. Dismissed.

Case 110. Action started 1919. Settled by insurance company.

Case 96. Action started 1918. Dismissed.

Case 100. Action started 1918. Dropped by plaintiff.

Case 97. Action started 1918. Verdict for plaintiff; appealed to Supreme Court.

Case 117. Action brought 1919. Dropped by plaintiff.

Case 77. Action started 1915. Verdict for defendant.

Case 121. Action started 1920. Dismissed.

Of other pending cases nothing was heard during the year and most of these will probably never be brought to trial. It will be noticed that the number of actions brought or threatened exceeds those of other recent years. Whatever may be the cause of this increase, the results shown in the above statistics are such as will certainly not tend to encourage malpractice litigation.

The statement of receipts and disbursements will appear in the annual report of the Treasurer.

The committee has an additional report to make, as follows:

"At the 1920 meeting of the Society, the Reference Committee of the House of Delegates recommended that the Executive Committee on Medical Defense prepare for the next annual meeting such changes in the constitution and by-laws as will properly incorporate in it the Council and Executive Committee on Medical Defense.

Pursuant to this recommendation your Committee has collected and examined the rules and regulations adopted at various times since the organization of the Defense System in 1908, and find that these contain all that is essential to the proper working out of the defense feature.

Only a few slight changes seem necessary in the wording of the rules originally adopted in 1908 and in the Amended Report of the Council on Medical Defense adopted in 1913. One change relates to the number of members constituting the executive committee, which was a few years ago changed from three to five; one of these members should be elected each year and the term of service be made five years instead of three.

Another necessary change relates to the amount of the annual dues covering the defense privileges; the present amount of two dollars per member is inadequate to cover the cost of defense, and your committee recommends that it be raised to two dollars and fifty cents.

Your committee would therefore recommend that the following rules and regulations be re-enacted, amended as suggested, and adopted as part of the By-laws of the Society by the House of Delegates at the present annual meeting.

Respectfully submitted,

Executive Committee on Medical Defense.

OSCAR LOTZ, *Chairman.* H. REINEKING, *Secretary.*

DR. REINEKING: Now I think it would be well to read the rules and regulations that have governed this committee, and I will call your attention to the slight changes that we have suggested at the proper place.

This is largely the original draft made by the committee which was appointed in 1907, at a meeting in January, 1908; the defense feature dates from that time.

The Council on Medical Defense shall consist of the president, secretary and treasurer of the Society, with the 12 councilors, who shall elect from their number, or the Society at large, an executive committee of 3—it says 3 here, and that you propose to change to five—designating the chairman, and who shall also by virtue of their appointment be members of the Council on Defense.

So the Council on Defense consists of the councilors, the officers of the Society, and the 3 or 5 members of the Executive Committee who may be members of the council or may be outside of the council.

The Executive committee shall be perpetuated by the election of one member each year. The term of service of each member shall be three—now five—years, provided that, as first organized, the service shall be determined by lot, with terms expiring in 1, 2 or 3 years—now 1, 2, 3, 4 or 5 years respectively, from January 1st, 1908,—I will read from the present date—on February 7th, on or whenever this is adopted.

Second. On and after January 1, 1908, it shall be the duty of the Executive Committee to investigate all claims of malpractice against members, and if, in their judgment, the case is one to be properly defended, to forthwith forward all papers connected with the case, received from the applicant, to the attorney of the Society, but they shall not pay, nor obligate the Society to pay, a judgment, claim or settlement against any member. An adverse report by this Executive Committee upon any case submitted for defense shall entitle the defendant in any action to appeal to the Council on Medical Defense, and the decision of this body shall be final.

Third. The Executive Committee shall adopt rules for its guidance, and for the guidance of the members of the State Society to contract with such agents (attorney or other) as they may deem necessary.

Fourth. They shall have charge of the Medical Defense fund, which shall be secured as follows:

Each member of the State Society shall be assessed—at first it was $1, then $2, and it seems it is advisable now to make it $2.50—shall be assessed $2.50 a year for this fund alone, to be paid with the regular state dues, and shall be subject to warrants signed by the chairman and secretary of the Executive Committee.

The warrants have all been signed by the treasurer of the Society. The committee has not handled its own funds, but they have been kept in the hands of the treasurer of the Society, which would seem to be the better way.

Fifth. The Executive Committee shall at each annual meeting of the State Society make to the House of Delegates a detailed report of all expenses incurred and work done during the year ending—it says here April 1st, now we have changed that so as to read, "during the year ending the 1st of the month preceding the month of the meeting."

Sixth. No action shall be taken by the State Medical Society of Wisconsin in reference to an act committed prior to January 1st, 1908, or before the date of qualification of the accused as a member of the Society. Furthermore, no member shall be entitled to the privilege of defense by the Society, whose dues to the Society are not paid in advance. We add an insert, so as to make it read like this: "Furthermore, no member shall be entitled to the privilege of defense by the Society whose dues to the Society are not paid in advance or were not paid at the time the services complained of were performed." This means that if the member was not in good standing at the time when the services complained of were performed he is not entitled to defense any more than a member would be entitled to his life or accident insurance if the death or accident occurred after he had lapsed his payments—and such defense shall be granted only to members residing in Wisconsin and not to non-resident or affiliated members."

Here are the rules and regulations of the Executive Committee:

First: Any member of the State Society in good standing against whom there has been instituted suit for alleged malpractice, shall promptly file with the Executive Committee, in compliance with the constitution, by-laws, rules and regulations of the Society, the application blank properly filled out in the manner and form provided.

I believe those application blanks have never been printed, and it seems better to let each member make his statement in his own way instead of asking him to fill out a blank. So the way we have it now it reads:

Any member of the State Society in good standing against whom there has been instituted suit for alleged malpractice, shall promptly file with the Executive Committee a full statement of the facts in the case, including the dates on which the services complained of were rendered, and all other relevant facts within his knowledge.

Second: Upon the receipt by the Executive Committee of said statement, the committee shall promptly make a thorough investigation of the facts in connection therewith, and if (the applicant being a duly qualified member of the Society prior to and at the time of the act complained of) in the judgment of a majority of the Committee the claim upon which the suit is based is not meritorious nor just, the committee shall forthwith forward all data connected therewith to the attorney of the Society with directions to take all necessary and proper steps to defend, and he shall defend such suit.

Third: In the defense of a suit the attorney shall have the assistance of the Executive Committee of the Council on Medical Defense, and that of the councilor in whose district the suit is brought.

Third-a: Defense shall be refused a member of this Society in whose case the charge of violation of a state law or statute is substantiated.

Fourth: Any member whose application for defense has been rejected by the Executive Committee, may appeal from such adverse decision to the Council on Medi-

cal Defense. The determination of the Council on Medical Defense shall be final.

Fifth: Non-payment of medical defense dues shall disqualify a member from the privilege of defense by the Society. By "non-payment of medical defense dues" is here meant a failure to pay the dues for each and every year of the individual's membership in the Society.

Sixth: Any delinquent member of the Society who wishes to come under the protection of the defense clause, must pay the total assessment of his years of delinquency.

Seventh: The reinstatement of a delinquent, as provided for in the preceding paragraph, does not entitle him to the protection of the Society in the event of suit for malpractice being brought against him for an act committed prior to such reinstatement. In other words, he must be in good standing at the time when the services are rendered.

THE PRESIDENT: Is there any further discussion?

DR. G. WINDESHEIM, Kenosha: Mr. President and Gentlemen. The secretary of this committee has made some recommendations here which might be open for discussion, and possibly for the benefit of the committee should be discussed and should be decided either now or at a later date. Personally, I do not believe that these rules of the Executive Committee or the Council on Medical Defense should be incorporated in the by-laws. However, I do believe that they should be drafted, discussed, printed, and a copy sent to every member of the State Medical Society. There are so many men in the State Medical Society who pay their dues for medical defense without having the slightest idea of what they are paying those dues for. If anything does happen they do not even know whom to address, and do not know where to go. Another fact is that many of them do not know that they must be members in good standing in order to get the benefit of the medical defense.

There are some things in this report that I think are objectionable. In the first place, the secretary of the committee says that they should have the report up to the first of the month preceding the annual meeting. That would mean the report one year for ten months, another year for 11 months and another year for 12 or even 14 months. I think that the Council on Medical Defense should have a fiscal year from one date to the same date in the next year, for which to bring in their report. The report would be more easily understood then.

He stated that the dues should be paid at a certain time. I think that this House of Delegates at one time went on record and decided that the dues for medical defense must be paid by the 1st of February if the member wants any protection during that year, and I still hold that that is the better way. The dues should be paid at the beginning of the year, both the membership fees and the dues for the medical defense—at least by the 1st of February.

As far as the balance of the report is concerned, there are some slight changes in the present method proposed that are probably all right.

THE PRESIDENT: Is there further discussion of this report?

DR. H. REINEKING, Milwaukee: Mr. President and Gentlemen. There are some difficult problems connected with just these questions that Dr. Windesheim has brought up. For instance, the first and second of our by-laws read—the name of a physician on the properly certified roster of members of a component society which has paid its annual assessment—shall be prima facie evidence of membership in this body, and all the rights and privileges pertaining thereto.

Now, do the secretaries and officers of the county societies report members to the secretary of the State Society? Do they report any members in good standing who have not paid their dues, when they send in their annual rosters? If they do, then according to this by-law they are members in good standing, whether they have actually paid their dues or not, and it might be a difficult legal question to decide whether or not they are entitled to the defense.

So far as the recommendation of the committee to incorporate this in the by-laws is concerned, that was done in conformity with a request of the Reference Committee of last year.

In the May, 1921, number of our Journal, I published a short editorial in which everything is stated that it is necessary for members to know about this medical defense. Inasmuch as the membership of this committee is always changing, they are requested to write primarily to the secretary of the Society. Of course they can write to the members of the committee, if they know who they are.

DR. J. LETTENBERGER, Milwaukee: If I am not out of order, Mr. President, I move the adoption of the report as presented, with the corrections and amendments as presented by Dr. Reineking.

DR. G. WINDESHEIM, Kenosha: Mr. President, the paragraph that the doctor just read in regard to the privileges of the members of the State Medical Society has no reference whatever to the medical defense fund. Each member of the State Society has the privilege of becoming a beneficiary of the medical defense fund. There are however, a number of members in the State Society who do not avail themselves of that privilege. They simply pay their dues as members of the State Society, but they do not pay dues to the medical defense fund. Now, as originally planned, contribution to the medical fund was made compulsory on all the members, and I well remember the stir-up that we had one year when some of the counties simply refused to pay the medical defense dues, and some of the members dropped out. In order to keep the profession together it was agreed that those members who did not want to pay their dues for the medical defense fund might keep out of it, that is, they can still be members of the State Medical Society of Wisconsin while they are not contributing to the defense fund. All members have the privilege however, of availing themselves of the medical defense by paying the extra dues.

There is another question in my mind about which

Dr. Reineking spoke to me the other day, and that is with regard to raising the medical defense dues to $2.50 a year. I told him at the time that I would be in favor of raising it to $3, if necessary, so as to be sure that there is enough money to carry on the work as it ought to be carried on. It is carried on all right, but every year when the report comes in we are a little bit short of money. Would not $3 be better than $2.50, Dr. Reineking?

DR. REINEKING: Last year we had a short year of 11 months, and we had a little money to spare. This year to my surprise, while the cost of the defense has been much higher, the funds will just about reach; that is perhaps because our expense was low last year. The cost this year has been very close to $3600, whereas the income has been about $2800. So that a half a dollar more from those who contribute to the fund would bring it up to $3500 or $3600 as least, which in ordinary years I think would more than suffice.

DR. G. WINDESHEIM, Kenosha: Some doctors have objected to the medical defense action of the State Medical Society, because they think still that it is money thrown away, and will say, "I do not believe in medical defense, I have no use for it." I tell them this: I am in a position where I do not think I shall ever need the medical defense for any case of malpractice, but if I pay $2 a year or even $3 a year, and have been in practice 50 years, that will only amount to $150; now $150 during my lifetime would be a very small contribution to help some poor man out who has gotten into trouble, some brother practitioner that someone believes too prosperous, and it seems to me that every physician ought to feel that way; if he does not need the medical defense for himself, he ought to feel as though he wants to help his brother practitioner along wherever he can.

DR. S. S. HALL, Ripon: I will answer the question now. The receipts for last year in the medical defense fund, were $3321, since the time of the last report, just about 12 months.

DR. FRANZ PFISTER, Milwaukee: As I understand this medical defense fund, it is a fund altogether separate from all other funds, and it occurs to me that we might be accepting money under false pretenses if we take money from people who are in arrears to pay up, or if we take money from people who pay after February 1st, because we do not intend to furnish any protection for them. Would it not be better, in order to avoid trouble with such people, that we say that the defense fund part has to be paid by the 1st of February, and no more defense money will be accepted after that?

THE PRESIDENT: The time is growing short, Doctor, would you withdraw your motion, so we can refer this to the committee on reports of officers and committees, which comes up on Thursday?

DR. LETTENBERGER, Milwaukee: That is agreeable to me.

THE PRESIDENT: This will be submitted to the Committee on Reports of Officers and Committees, which comes up on Thursday morning.

The next order of business is the report of the Committee of 12 on Nominations, one man from each district. I shall ask our secretary to read the members from each district.

SECRETARY SLEYSTER: I think it will probably expedite matters if when I call the different counties in the district, the members who are present will respond. That will show us who is here.

Nominations were made from the various districts on the Nomination Committee, as follows:

1st District—Dr. F. W. Aplin, Waukesha.
2nd District—Dr. H. A. Robinson, Kenosha.
3rd District—Dr. W. F. Lorenz, Mendota.
4th District—Dr. E. H. Spiegelberg, Boscobel.
5th District—Dr. Otho Fiedler, Sheboygan.
6th District—Dr. C. D. Boyd, Kaukauna.
7th District—Dr. G. J. Egan, La Crosse.
8th District—Dr. A. J. Gates, Tigerton.
9th District—Dr. Joseph Smith, Wausau.
10th District—Dr. Iver Stoland, Eau Claire.
11th District—Dr. Dell Andrus, Ashland.
12th District—Dr. Franz Pfister, Milwaukee.

THE PRESIDENT: We will ask the men who have been elected to this Nominating Committee this evening to meet in the rear of this hall after this meeting, so that they can organize and get together tomorrow, and have a meeting Wednesday. This committee brings in its report Friday morning.

The next business this evening is the report of the Committee on Health and Public Instruction, Dr. W. D. Stovall, Chairman.

REPORT OF THE COMMITTEE ON HEALTH AND PUBLIC INSTRUCTION.

To the House of Delegates:

The Committee on Health and Public Instruction has had no meetings during the last year.

The Committee, however, has published articles in the State Medical Journal concerning public health matters for the advantage of the medical profession of the State.

The Committe has also taken up the matter of circularizing all public health officials in the State, urging them to be present at the Milwaukee meeting and stimulating their interest in public health matters.

The Committee has also been interested in securing the interest of the medical profession in the control and prevention of communicable diseases.

Respectfully,

W. D. STOVALL.

THE PRESIDENT: We will now have the report of the Committee on Medical Education, Dr. Bardeen.

THE SECRETARY: Dr. Bardeen is not here.

THE PRESIDENT: Dr. Jermain, would you report for that committee?

The report of the Committee on Medical Education was given by Dr. L. F. Jermain, Milwaukee, as follows:

REPORT OF COMMITTEE ON MEDICAL EDUCATION.

To the House of Delegates:

The past year has been marked by increasing demands for medical education within the state. The medical schools both of the State University and of Marquette University have had their resources taxed to take care of the qualified students who sought admission. It is obvious that the state legislature took steps none too soon toward the establishment of a complete medical course at the State University. The new State General Hospital is now under construction at Madison and it is hoped to begin the third year of the medical course in 1923, the fourth year in 1924. The annual meeting of the Council on Medical Education of the American Medical Association was marked by the presentation of several interesting papers and active discussion. Special stress was laid upon the need of improving the facilities and methods for clinical instruction. For nearly a generation attention has been focused largely on premedical requirements and work in the fundamental branches. The present problem is largely one of correlating preliminary training in laboratory science with practical experience in the care of the sick.

Respectfully submitted,

C. R. Bardeen,
L. F. Jermain,
Edw. Evans.

The President: The next order is the report of the Committee on Necrology, Dr. Sleyster.

REPORT OF THE COMMITTEE ON NECROLOGY.

To the House of Delegates:

The following is the report of the Committee on Necrology, including deaths reported to September first, 1921. (Names of members of the State Medical Society are printed in bold face type):

Abraham, H. W.....Appleton
Adams, J. C.....Superior
Buckley, W. V.....Hartford
Burke, Thos. .....Wayside
Chilson, Benjamin.....Beloit
Christian, E. F.....La Crosse
Connor, Henry T.....Chippewa Falls
Donaldson, G. F.....Shiocton
Donovan, Jeremiah .....Milwaukee
Fickes, H. C.....Owen
Field, F. T.....Elroy
Gould, C. M.....Tucson, Ariz.
Griswold, G. W.....Alma Center
Hill, Geo. R.....Kendall
Hochrein, Geo. W.....Chicago
Jackson, Sr., J. A.....Madison
King, Geo. F.....Green Bay
Lacey, S. W.....Footville
Lemon, Chas. H.....Milwaukee
Little, A. H.....Milwaukee
Little, W. D.....Maiden Rock
Lothrop, C. A.....Ripon
Mason, Geo. F.....Milwaukee
McCallen, A. E.....Wis. Vet. Home
Meilike, H. A.....Clintonville
Muth, Sr., Carl.....Sheboygan
O'Brien, Wm. T.....Ashland
Ridgman, A. L.....Wisconsin Rapids
Rodermund, A. M.....Athens
Rogers, A. C.....Cascade
Rood, Chas. A.....Reedsburg
Smith, Geo. L.....Jefferson
Squire, H. D.....Sheboygan
Stalker, Mrs. H. J.....Kenosha
Stevens, Frank E.....Bristol
Teschan, R. C.....Milwaukee
Vilas, Chas. H.....Madison
Von Neupert, Carl, Sr.....Stevens Point
Voss, Herman H.....Racine
Walbridge, J. S.....Berlin
Westedt, Otto .....Loganville

Respectfully submitted,

Rock Sleyster,
Chairman.

The President: The next order of business is the report of the Committee on Cancer, Dr. W. K. Gray, Milwaukee, Secretary.

Dr. J. P. McMahon, Milwaukee: Mr. President, I fail to see Dr. Gray in the room. I am a member of the committee and shall be pleased to briefly discuss the cancer situation if time permits. If it does not, I shall be glad to have an opportunity to discuss the problems involved at a later meeting of the House or the Council.

The President: What is the opinion of the House of Delegates? Do you wish to hear the report discussed by Dr. McMahon or not? Dr. McMahon will you read the report, there being no objections.

REPORT OF THE CANCER COMMITTEE.

To the House of Delegates, State Medical Society of Wisconsin:

Gentlemen:

Your Committee on cancer desires to submit the following report:

During the past year the Committee has laid plans and commenced what is hoped will conclude in an intensive campaign aimed at the idea of bringing malignant cases to correct diagnosis early. Naturally, the problem is a very big one and it has ramified in many different directions totally unexpected. Two avenues of approach have presented themselves; the one educational to the laity and the other directed towards the Profession itself.

Working in cooperation with the American Society for the Control of Cancer, which has delegated its share of the work in Wisconsin to Dr. J. L. Yates, we have gradually settled upon more or less definite plans. In order to present to the Profession early diagnostic

problems, your Chairman has prevailed upon the above mentioned Society to construct and deliver to us two separate series of lantern slides, the one covering Genito-urinary cases and the other Gynecological cases. These when received, will be available to the different component County Medical Societies of the State for society use. In addition, sets of lantern slides will soon be ready for lay consumption, the idea being to present the latter before Women's Clubs and other Societies.

The University Extension Department has cooperated freely with your Committee in appointing two Members on its faculty for County Medical Clinics and demonstrations. We hope that larger use may be made of this agency. Our main efforts in 1921 will be directed toward a Cancer week from October 30th to November 5th, inclusive, during which time an attempt will be made to cover the state as nearly as possible. Dr. C. A. Harper, Secretary, State Board of Health, has offered to make available his machinery for carrying out the various plans which are really those of the American Society for the Control of Cancer that will be used during the same week throughout the United States.

Dr. G. C. Ruhland, Health Commissioner of Milwaukee, stands ready to cooperate in any way that he can and has made many valuable suggestions. The Milwaukee Health Department plans a Health Exhibit at which occasion will be taken to present cancer propaganda. It is believed that the work of this Committee during the present year will be merely laying the ground structure for a more intensive campaign to follow. The Committee's expenditures during the year were as follows:

9-10-20—Express Slides from N. Y.	$ 1.24
9-30-20—Express Slides to N. Y.	1.38
2-2-21—Lantern Slide Box	4.00
1-20-21—62 Slides made for linotype	52.70
Linotype on these slides	19.10
62 Slides from copies	50.38
27 Slides colored from copies	21.94
Mail and Insurance	.40
2-25-21—1 No. E. K. Lantern Slide Box	3.00
4-27-21—1 Set C. A. Pamphlets	.75
	$154.89

Respectfully submitted,

W. E. Ground,
Edward Evans,
C. H. Bunting,
J. P. McMahon,
By Walter Gray, *Secretary.*

Dr. McMahon then discussed the report as follows:

Dr. McMahon: When one recalls that approximately 100,000 die annually from cancer in the United States, and that nearly 2500 of these deaths take place in Wisconsin it would seem as though there were a great deal of work to be done by this committee. The committee was created during Dr. Bardeen's term as president. Owing to the fact that the members are located in different parts of the state, considerable time elapsed before we became organized. As we view the situation, worth while results can be achieved only by undertaking a comprehensive and continuous campaign of education of both ourselves and the laity on the early diagnosis of malignant lesions in the different organs and parts primarily affected.

There is a national organization for the study and control of cancer which has been in existence for some time and they have prepared literature and assembled a few slides on the subject. We examined these slides, after which we concluded that while they were fairly satisfactory for use before lay audiences they were of practically no use before professional audiences. We had considerable correspondence with the executive officer of this association and finally, a number of months ago, they adopted a plan which we outlined providing for the preparation by representative surgeons and dermatologists of sets of slides covering general surgery, gynecology, genito-urinary surgery, and dermatology, but to date we have not been able to secure many new slides.

In our opinion there should be two sets of slides owned by this society; one to be used by the members before their own component societies, county dental societies, county nurses' organizations and another to be used by our own members before the membership of every local lay organization throughout the state.

The slides, however, will be of no material service to the public unless the councilors and the county secretaries of this and other State Medical Societies take sufficient interest in the matter to arrange for professional, lay and mixed meetings before which they can be discussed and re-discussed until every adult shall know the early presumptive symptoms of cancer and until every physician shall be competent to recognize and properly treat all patients who consult him and who are found to be the subjects of malignant neoplasm. This in the main is our program.

We are gratified to be able to report that, as a result of a recent conference with Dr. Harper, the State Board of Health has agreed to undertake to conduct an educational campaign for the laity which is to be a part of a nation-wide campaign scheduled for the first week of November, provided that active cooperation of the medical profession in the several communities shall be enthusiastically accorded. Dr. G. C. Ruhland, Commissioner of Health, has offered to undertake a similar campaign here in Milwaukee.

The opportunity for service is too evident to require further discussion; proper and qualified organizations will undertake the details of interesting the laity and the only question remaining to be determined is whether the rank and file of the profession shall live up to their opportunity in the premises. There can and will be only one answer.

The President: Is there further discussion? I feel that there ought to be some discussion on that question. This matter will be referred to the Committee on Officers' and Committee Reports.

The next business in order is the report of the Advisory Committee on Hospitals, Dr. Louis F. Jermain, Chairman.

REPORT OF ADVISORY COMMITTEE ON HOSPITALS.

To the House of Delegates, State Medical Society of Wisconsin:

GENTLEMEN:

The State of Wisconsin with a population of 2,632,067 has 129 Hospitals, 81 of these are over and 48 under 25 bed capacity, making a total of 7,570 beds, or a ratio of 1 bed to every 348 inhabitants. For the entire country the proportion is one bed to every 340 people. The state having the largest supply is Nevada with one bed to every 139 people and the lowest is Mississippi with one bed to every 1,054 people.

In Wisconsin there are 26 counties with no hospitals, namely: Adams, Buffalo, Burnett, Clark, Florence, Green Lake, Iron, Jackson, Kewaunee, Lafayette, Marquette, Oconto, Ozaukee, Pepin, Pierce, Richland, Rusk, Saint Croix, Taylor, Trempealeau, Vernon, Vilas, Washburn, Washington, Waupaca and Waushara.

Of the 129 hospitals 19 are hospitals or sanatoriums for the treatment of tuberculosis. There are 14 county or joint county tuberculosis sanatoriums. A state sanatorium, a state tuberculosis convalescent camp and two private sanatoriums. In the State of Wisconsin there is one tuberculosis sanatorium bed for every 2,097 population.

There are 49 hospitals for the care of nervous and mental cases.

General hospitals approved for the training of interns are, St. Joseph's Hospital, Ashland; St. Agnes Hospital, Fond du Lac; La Crosse Lutheran Hospital and St. Francis Hospital, La Crosse; St. Mary's Hospital, Madison; St. Joseph's Hospital, Marshfield; Columbia Hospital, Milwaukee Hospital, Mt. Sinai Hospital, St. Joseph's Hospital, Milwaukee County Hospital in Milwaukee.

Special hospitals approved for the training of interns are: Milwaukee Children's and Trinity Hospital, Milwaukee; St. Mary's and Mercy Hospital, Oshkosh.

During the year applications for approval have been forwarded by Madison General Hospital, Madison, and St. Mary's Hospital, Superior. Both of these institutions were inspected and the reports sent to the Council on Medical Examination and Hospitals.

During the year the various agencies concerned with the standardization and improvement of hospitals have manifested much activity and their combined efforts give promise of much improvement. Your committee feels that it is particularly important to aid and encourage in every way the smaller hospitals in urban communities. It is only by developing and improving these institutions that the recent medical graduates can be induced to take up country practice and relieve the alarming scarcity of country doctors.

Respectfully submitted,

LOUIS F. JERMAIN, M. D.,
L. E. FAZEN, M. D.,
F. S. WILEY, M. D.,
J. V. R. LYMAN, M. D.,
F. G. CONNELL, M. D.

THE PRESIDENT: Is there any discussion of this report? If not, it will be referred to the committee.

The next order of business is the report of delegates to the annual meeting of the A. M. A.

SECRETARY SLEYSTER: Dr. Smith, Dr. Brown and I were all there.

The report of the delegates to the 1921 meeting of the American Medical Association was then given by Dr. Rock Sleyster, Wauwatosa, as follows:

REPORT OF DELEGATES TO A. M. A.

To the Members of the House of Delegates of the State Medical Society of Wisconsin:

GENTLEMEN:

The House of Delegates of the American Medical Association was called to order at Boston the morning of June 6, 1921, all of your delegates being present, Dr. Joseph Smith, of Wausau, alternate, taking the place of Dr. Charles H. Lemon, Milwaukee, who died during the year.

Dr. Sleyster was appointed by the Speaker of the House as chairman of the Reference Committee on Constitution and By-laws.

The report of the Secretary of the American Medical Association showed 84,971 members in 1920 and 48,318 Fellows. This is a membership gain of 1,500 during the year.

The report of the Board of Trustees showed an annual gross income of $800,000 and showed the business affairs of the association to be in excellent condition.

Various matters were brought up through resolutions and special committee reports. Among them, the question of a national medical defense system of the American Medical Association was referred to the Judicial Council with instructions to investigate same.

The question of medical legislation received considerable discussion and the Board of Trustees was instructed to investigate the feasibility of a full-time executive secretary whose duty it would be to follow closely all legislation, state and national, through an organization to be formed throughout each state.

The question of the medicinal value of alcohol received lively discussion and was referred to the Council on Scientific Assembly with instructions to bring in a report before the 1922 meeting. The following resolutions on the prescribing of alcohol were unanimously passed:

Whereas, Reproach has been brought upon the medical profession by some of its members who have misused

the law which permits the prescribing of alcohol,

Therefore Be It Resolved, That the American Medical Association now expresses its disapproval of the acceptance by a small minority of the profession of the position of being purveyors of alcoholic beverages.

The report of the reference committee on legislative and public relations was considered by the House as a committee of the whole. The House in this way endorsed certain specific recommendations of the council as follows:

1. That the American Medical Association recommends that general hospitals in all parts of the United States should provide separate wards or separate rooms for the care of pulmonary tuberculosis patients and that such patients be never denied admission, at least in emergency and for temporary periods, because of the character of the disease from which they are suffering.

2. That the venereal disease control movement can not reach full effectiveness without the intelligent and sympathetic co-operation of the medical profession and that this co-operation should include the rapid extension of teaching facilities.

3. The opinion of the council on the elementary teaching of the nature and transmission of communicable diseases in the public schools was approved. It also approved the plan of fostering the formation of special societies consisting of physicians and laymen interested in public health matters.

4. It approved and authorized the council to appoint a committee to study the entire question of sects in medicine and the attitude which the American Medical Association should adopt regarding them.

5. It authorized the Council to appoint a committee to survey the entire subject of vaccination and to prepare suitable material for educating the public on the question.

6. The committee of the whole reviewed the various resolutions and a number of definitions presented covering the subject of State medicine, and brought in as a substitute for these the following resolutions:

Resolved, by the House of Delegates of the American Medical Association, that it approves and endorses all proper activities and policies of state and Federal Governments directed toward the prevention of disease and the preservation of health.

The following general officers were elected for the year 1922: President, Geo. E. de Schweinitz, Pennsylvania; Vice-President, Frank B. Wynn, Indiana; Secretary, Alexander R. Craig, Illinois; Treasurer, W. A. Pusey, Illinois; Speaker of the House, Dwight L. Murray, New York.

St. Louis was chosen as the next place of meeting.

Signed,

Horace M. Brown,
Rock Sleyster,
J. F. Smith.

The President: We will now have the report of the delegate to the Council on Medical Education and Hospitals, Dr. L. F. Jermain.

REPORT OF DELEGATE TO COUNCIL ON MEDICAL EDUCATION AND HOSPITALS, A. M. A.

To the House of Delegates, State Medical Society of Wisconsin:

Gentlemen:

Up to a year or two ago the Council on Medical Education had busied itself mainly with the problem of standardizing medical colleges. With the establishment of the interne year it was realized that the question of facilities and character of work done in the hospitals was an important one and came within the scope of the council's activities. Similarly graduate education loomed up as a momentous problem. In order to definitely empower the council to enter into the consideration of these various activities the House of Delegates last year changed the name of the Council to that of the Council on Medical Education and Hospitals.

The last annual congress, therefore was a Congress on Medical Education, Licensure, Public Health and Hospitals and specifically considered reports of committees on graduate training. These committees arrived at the conclusion that the time had arrived when the organized profession of this country should take up the problems of the proper training of specialists and that at least three years of work in a well organized clinic in a particular field should be required. Such work and training to be eventually recognized as a definite requirement by State Boards of Medical Examiners.

The following is a report of the Reference Committee on Medical Education and Hospitals:

"Your committee is in full agreement with the declaration that medical educational and hospital problems should be largely under control of the medical profession, and further agrees that the American Medical Association, with its county and state medical society units, is fully qualified and able in all respects to carry on those projects which are in the interest of the medical profession in its relation to public welfare.

"We also subscribe to the expressed opinion that these organizations represent the medium from which should emanate an intelligent and energetic propaganda for the education of the people and the profession in medical matters.

"We note that the Council reports that five states are registering unusually large numbers of graduates of low grade medical colleges or are granting physician's licenses to osteopaths. Your committee has no remedial measure to suggest, but would earnestly recommend that the Council give this matter special study during the ensuing year and, if possible, make some constructive suggestions on this point in the next annual report.

"Your committee endorses the stand taken by the Council with reference to the reorganization of the undergraduate medical curriculum to the end that the student can be trained primarily as a general practitioner and that all attempts to produce specialists during the undergraduate periods should be avoided.

"We deplore with the Council that hospital facilities

are so meager in some quarters, and would recommend as a trial method the proposed general establishment of medical laboratories or hospital plants where well qualified physicians would be eager and satisfied to work. This would result in the giving of better medical treatment to all classes, rich and poor, and would make rural practice more attractive to right thinking medical men.

"Your committee believes that the whole subject of medical education has undergone and is undergoing such rapid changes that some of the innovations now before us should be considered in the light of experiments in education. This refers, among other things, to the mooted question of the full-time clinical professorship. Whether he is to be permanent in our medical schools depends on factors which cannot properly be estimated at the present time. We think that, in all fairness, funds in the same abundance as are at the disposal of full-time clinicians should be appropriated for the conduct of medical teaching by part-time professors, if the comparison between the new and the old methods of clinical teaching is to be just."

The following are extracts from the bulletin issued by the Council on Medical Education and Hospitals. Revised to March 1st, 1921:

"After January 1, 1922 no college of liberal arts or sciences or junior college located in the district of the North Central Association of Colleges and Secondary Schools which is not approved by that association will be considered as acceptable by the Council on Medical Education and Hospitals.

Note Regarding Junior Colleges.

"Credentials of premedical work taken in Junior Colleges must show the completion of at least sixty semester hours in subjects of college grade, including the required credits in physics, chemistry, biology, and English. Students presenting such credentials must have completed fifteen units of accredited high school work before taking college courses.

Normal Schools.

"Students presenting credentials from Normal Schools, which are organized primarily for the training of teachers, may be accepted if their credentials have the certification of the registrar of the state university that the courses in the prescribed premedical science are the equivalent of the courses accepted from approved colleges and universities.

In both quantity and quality college courses presented for admission to medical schools must be such as would be acceptable as the equivalent of the work of the first two years of the course leading to the degree of Bachelor of Science in well recognized colleges of liberal arts and sciences."

At the meeting of the Association of American Medical Colleges held at the same time, important papers dealing with undergraduate teaching of Medicine, Dermatology and Syphilology, Pediatrics, Neurology and Psychiatry, Surgical and the surgical specialties and Obstetrics and Gynecology were read and discussed.

Respectfully submitted,

LOUIS F. JERMAIN, M. D.

THE PRESIDENT: Is there any discussion of this report of the delegate to the Council on Medical Education and Hospitals? If not, the next order of business is the report of the delegate to the Council on Health and Public Instruction, Dr. G. Windesheim, of Kenosha.

REPORT OF DELEGATE TO THE COUNCIL ON HEALTH AND PUBLIC INSTRUCTION, A. M. A.

Mr. President, Members of the House of Delegates:

Your delegate to the Council on Health and Public Instruction of the American Medical Association attended the annual conference on March 10, 1921. The address by Dr. Victor C. Vaughan, the chairman of the Council, recommending the establishment of rural health centers as an aid to the general practitioner, was well received and discussed by Dr. Frank Billings and others. From the various discussions it appears that the establishment of a county hospital as a health center equipped with a good medical library and laboratory facilities is considered as the best means by which the rural practitioner can improve on his facilities for diagnosis and treatment. It was reported that the State of Iowa was the first to pass a law empowering the counties to establish such hospitals and health centers. This was in 1910, since then sixteen other states have fallen in line. Wherever these Health Centers have been established they have been of invaluable benefit to the public as well as to the general practitioner. It appears furthermore from the discussions that these Health Centers and County Hospitals could only be established in such counties in which the medical society was active and worked in unison, and where the medical men were willing to instruct the public as to the necessity of such institutions: whereas in those communities where the medical profession is divided or lax in its efforts of improvement, the proposition was voted down by the County Board.

Other papers presented and discussed were on the subject of Public Health work. One proposition presented, i. e., that the fundamental principles of Public Health should be taught in the schools deserves more than passing notice.

Your delegate recommends that the State Medical Society take such steps as would tend to eventually bring about the establishment of these two conditions in Wisconsin.

Respectfully submitted,

G. WINDESHEIM.

G. WINDSHEIM, Kenosha: Mr. Chairman and Members of the House of Delegates. The report as given is practically the report of your delegate. There are a few things that might be added. In the first place, Dr. Vaughan, in his address, gave positive proof by statistics to show that the death rate in rural districts has not decreased in the past 20 years, whereas the death rate in the cities has decreased. He brought that out pur-

posely to show that the facilities that the physicians in the cities have for diagnosis and other work are so much better than the facilities in the rural districts, and consequently the rural districts need to give the physicians better facilities, and for that purpose it was suggested that County Health Centers, consisting of hospitals and laboratories and so on, should be established in every state in the Union. There should be community hospitals, laboratories, libraries and other facilities provided, for the free use of all the physicians in the community.

Also among other matters presented, there were various plans proposed and discussed by various members of the council and delegates, and the principal indication appears to be the necessity of more thorough instruction of the public in matters relating to health. To obtain this, special efforts should be put forth by each state medical society. The State Medical Society of Wisconsin has for some years past been trying to accomplish this, but somehow or other the work has not been very successful. But it is suggested that each county society and each member of the profession should do his part. The Council should select, or each county society should elect a committee on health and public instruction of that society. At the present time the constitution of the county societies makes it selective, I think, for the president to appoint a committee on public health and legislation; there ought to be a committee on health and public instruction elected by each county society, at the annual meeting, the same as other officers, whose duty it would be to bring before the public these questions on public health, similar questions as those which the Doctor spoke about relative to cancer. The public should be better instructed along those lines.

Then it is proposed that public health should be taught in the schools, or at least the principles of public health should be taught in the schools. For that purpose it would be necessary, and it should be mandatory, for every school teacher, in order to obtain a certificate to teach school, to have an education in public health, so that she could teach to the children in the public schools at least the principles of public health.

It seems to me that this Society and the component societies ought to work along that line.

THE PRESIDENT: Is there further discussion? If not, this report will be referred to the Committee on Officers' and Committee reports.

The next in order is the report of the chairman of the Council, Dr. Edward Evans.

DR. EDWARD EVANS, La Crosse: Mr. Chairman and Gentlemen. There is nothing special to report. During the year I think there has been a real growth in scientific interest in the State Medical Society, through the activities of the various district and county societies. A year ago, in cooperation with the secretary of the Society, as chairman of the Council, we made an effort to try to have the councilors realize that the Journal is specifically their journal. As representatives from the various districts, and as an expression of their interest in the Journal we tried to get one editorial at least from each Councilor. I think two or three of us responded; this is not enough. The councilors have not lived up to this part of their contract with the State Medical Society and their Journal. I think it would be well for the Councilors to try to do something more during the coming year to help the secretary. He is really giving us a pretty good journal. It is becoming better, and I think the councilors this year ought to try to help the secretary.

There is nothing further to report on, Mr. President.

THE PRESIDENT: Is there any further discussion of this report? If not, we will call on the Councilors of the various districts, and we will first hear from Dr. M. R. Wilkinson of Oconomowoc, Councilor of the first District.

DR. M. R. WILKINSON, Oconomowoc: Mr. President and Gentlemen. The membership of the 1st District has remained about the same as other years. We always have a few who are slow to pay.

Dodge County had 34 last year, and 30 this year, one removal, and one new member. I know some of those men, and I know that they are just a little slow and will come in later.

Jefferson County had 32 last year, this year 28. Jefferson has had difficulty in getting the members to turn out to the meetings. The largest city in the county is one of the poorest to attend; that is the city of Watertown.

I attended a meeting at Lake Mills during the past summer, and it was a very good meeting, at which Dr. Greeley of Madison, spoke, and there was only one man from Watertown present. Jefferson County members have started a new departure, and I am a little interested to see what the outcome will be. Any man who fails to attend a certain number of meetings in a year will forfeit his membership in the Society. This matter was discussed at that meeting. I told them that I thought they would be the losers financially if they did it, but their annual dues being light, they told me that the only difference would be about 75 cents a year for each member, and they did not believe that men who failed to attend the Society meetings were entitled to membership therein. There are two ways of looking at it, and I am interested to see whether they can compel attendance in that way. I see by the report that their membership is only 4 less than last year.

Washington County, 15 members last year, and 13 this year, a loss of two.

Waukesha County, 45 last year, and 44 this year, all paid up but one. The trouble with that particular member is that he owns a farm.

We have had no deaths, three removals, with two new members.

I attended a meeting at West Bend, Washington County, which was a very good meeting. Papers were presented, and the new sickness of which there were two cases in that community was brought out, a sort of paralysis, of which I cannot give you the details. Dr. Bours of Milwaukee was present and reported the other cases. It was a very interesting meeting in all respects.

The attendance at the meetings of the Waukesha County Society have been very good, with the exception of the last two meetings. Our regular meeting was to occur Wednesday of this week. On account of the annual meeting we pushed it ahead a week and bumped into the State Fair, which was a little too much for us. I will say that the spirit in the county is good, and the men are seeking enlightenment, and it is only a question of getting able men to come before the county societies and give them new ideas for which they are looking.

I look forward to the ensuing year to be one of better progress than any in the past.

THE PRESIDENT: We will now hear from the Councilor of the 2nd District, Dr. Windesheim.

DR. G. WINDESHEIM, Kenosha: Mr. President, and Members of the House of Delegates. I am not as proud of the 2nd District as I used to be. It is true that Kenosha has only a loss of 3 compared to last year; but last year they had 43, and this year 40; there was one death, one new member, and 3 delinquents; this is not as it should be.

Racine County is the best county in the district. It has not always been so. Dr. McMahon will probably remember when Racine County was at the bottom; now it is at the top. There were 47 members last year, and 45 this year, a loss of 2, which can be accounted for by the removal of one, and the death of one. Still there are 3 delinquents, made up by 3 new members. The delinquents will probably come in, so that the county will be better than it seems now.

Walworth County has been asleep for a little over a year. They have not held any meetings. That is due to the fact that our friend Kinne here laid down the prod. He used to keep them prodded up. At one time they had 28 members, but he got tired of it and turned the secretaryship over to somebody else. I kept telling him that the secretary is really the County Society, but he would not believe me and said that somebody else ought to do the work. He got lazy in his old days, you see. So last year there were 7 delinquents. This year, 1921, there wasn't one member on record, but thanks to the energy of your secretary, Dr. Sleyster, the County Society was revived. He came down to Kenosha one time and packed me in a flivver, and chased me over the hills of the western part of Racine County, and eastern part of Walworth County, and said, now get busy. The result of that was that the Society was reorganized with a membership of 13, 9 had paid up for last year, and the promise is that all the members will come in within a year. We have Dr. Sleyster to thank for that.

So the totals of the district at the present time are 98 active members, as compared to 109 last year, which is a loss of 11. I am confident, however, that by the end of the year that difference will be made up.

The fraternal spirit in the district seems to be very good indeed. The scientific work is carried on in Kenosha County. They have a meeting nearly every month. During the summer they did not have a meeting for one or two months; they usually get in some outside talent and make the meeting interesting. Racine County has a meeting 4 times a year, and they are very good meetings, always. The meetings are well attended and very instructive. I thank you.

THE PRESIDENT: The 3rd District, Dr. E. B. Brown, Beloit. Dr. Brown is not present, so we will call upon Dr. Cunningham, the councilor of the 4th District.

DR. WILSON CUNNINGHAM, Platteville: Mr. President and Members of the House of Delegates. There has been but little change in the 4th District, as far as membership is concerned. Some of the counties have been slow in reporting. My report is incomplete as I have not had a report from LaFayette County, but a report is promised. The total membership in the 5 counties is practically the same.

The meetings in Grant County have been regular, and the attendance has been good. In some of the counties with smaller membership the meetings have not been as regular.

In reporting the Medical activities of the district, I wish to commend the work of the Wisconsin State Anti-Tuberculosis Society. This society held two clinics in each of two or three towns of the district, and one in each of several other towns. The work done was excellent as everyone might believe who knows Dr. Pleyte, under whose untiring labor and direct supervision, all clinics were held. He is a capable man and his work is of a high order. These clinics have aroused a good deal of enthusiasm, and resulted in many people, who were a little suspicious of their own physical condition, coming to the clinic for examination. The examinations have worked much good in pointing out to the individuals their weaknesses, and the conditions which should be overcome, and in the cases where their condition indicated, directing them to institute medical treatment with their respective physicians. The cases I have come in contact with personally, have entered upon a course of treatment and observation with much enthusiasm as a result of being urged to do so by the clinic.

Another thing allied to general welfare medicine was a "Better Babies" contest at the Fair, which was held under the auspices of the American Red Cross Society. I think something like 60 babies were examined.

The county nurse has also been doing good work. All of these agencies are I think, accomplishing considerable from a medical standpoint and are for the good of the community and humanity, although it may look as though we are rapidly going to Social Medicine.

As for the scientific interest of the individual medical societies, I think the work has been on a par with previous years—the work in some counties being of a rather high standard, while that in other counties not quite as good.

THE PRESIDENT: I will call upon Dr. Zierath to report for the 5th District.

DR. W. F. ZIERATH, Sheboygan: Mr. President and Gentlemen. I am frankly discouraged concerning my district. So far as membership in the various component county medical societies is concerned, it is good. We have only 5 delinquents, and two of these can be ac-

counted for by removals. But so far as meetings in my district are concerned, I have a very bad report to make. We have had very few meetings. In trying to analyze the reason for this I think it is largely due to the fact that there are many things to take the place of our County Medical Society meetings. In Manitowoc County, the Manitowoc Hospital has regular staff meetings, which take the place of the regular meetings. In Sheboygan we have the staff meetings of St. Nicholas Hospital, and also the University Extension course, which seems to take the place of the regular meetings. Those things are very good and serve their purpose, but, unfortunately, only a comparatively few men in the county take advantage of them. The result has been that there has been a lack of interest in County Medical Society work. Instead of the University Extension course and the staff work being an advantage, it is really a disadvantage in County Medical Society work. Years ago when it was very hard to get County Society meetings, we had none of these things, and had better meetings than at the present time. Much of this I think is due to the fact that county societies do not make an effort to get an enthusiastic live wire secretary. It is so easy now to shift the burden of getting up Society meetings onto the staff meetings and the University Extension course. The University Extension course at Sheboygan has been very fine, but compared to its educational value it is poorly attended. However, within the last month I have had some correspondence with each secretary in my district, and we are going to try to revive interest, if we can, by a district meeting. Possibly with a district meeting, with papers by men in the county medical societies, not by outsiders coming in, we can stimulate some interest. Much of this lack of interest in county medical society work is probably due to the apathy which has followed the war from which we are just emerging. As an illustration of the lack of interest, I have written to each secretary in my district more than once, asking them to keep me posted of the time of their county medical society meetings, saying that I would be up the first meeting that I could possibly get away, and I have not heard from any of the secretaries.

The promise of cooperation in securing the district meeting has been assured me, and possibly by next year we will have a better report to make.

THE PRESIDENT: We will now have the report from the 6th District, Dr. F. G. Connell, of Oshkosh, Councilor.

DR. F. G. CONNELL, Oshkosh: Mr. President and Members of the House of Delegates. The report from the 6th District is as follows:

Brown-Kewaunee has the same membership as it had last year, 46.

Door County has a loss of 5, 3 delinquents and 2 removals.

Outagamie County the same number as last year, 35.

Fond du Lac a loss of 7, 59 to 52, 6 delinquents and 5 removals, and 4 new members.

Winnebago County 51 this year, 59 last year, a loss of 8; 6 delinquents, 5 removals and 3 new members.

This makes a total of 208 last year and 188 this year, a loss of 20. The delinquents total 22, the removals 15, and new members 15. So far as the numerical status of the district is concerned, there is some loss.

Relative to the meetings, I have had the same experience that Dr. Zierath has just mentioned. I have written to the secretaries of the component societies asking that they inform me as to the time of their meetings, and I have received very few replies.

The counties of Outagamie, Fond du Lac and Winnebago are quite active, and have successful meetings which are quite well attended. I know nothing about the other two counties.

I should like to commend the Outagamie Society, and I think this is due, as it always is due, to the secretary. Dr. Victor Marshall was elected secretary of this Society, and has been very successful during the past year with his meetings.

I believe that it is a mistake to make the youngest man in the county secretary of the county medical society, and that the secretaryship should be given to one of the older men. It would seem that if pressure was brought to bear upon some of the older men they could be prevailed upon to accept such a position, and that would help materially to make successful meetings.

I, too, have taken up the question of attempting to establish a district medical society. We find a little difficulty in this district on account of the existence of the Fox River Valley Medical Society, which in a way takes the place of the district medical society, but cannot be so called, because of the fact that over the state line in Michigan there is quite a membership in this Fox River Valley Society.

After discussing the question with the officers of the Society, and with Dr. Sleyster, I decided to not attempt to make any change in this society. Dr. Redelings states that it was adopted as a district society as a matter of record several years ago. On the whole, I think the report of this district is quite satisfactory.

THE PRESIDENT: We will now have the report from the 7th District, Dr. Edward Evans, La Crosse.

DR. EDWARD EVANS, La Crosse: Mr. Chairman and Gentlemen. On this little slip that the secretary sends out so that we may report as Councilors at this meeting, he reports 16 delinquents in my district. About half of them are accounted for by having been gathered into the bosom of Abraham. I have written to the rest of them. I do not know how many the secretary has heard from. I got responses from none.

SECRETARY SLEYSTER: Some have come in.

DR. EVANS: Like some of the other Councilors, I should like to commend the work of the Anti-Tuberculosis Association. Its staff of clinicians is doing splendid work in its clinics. The best county meeting I think we had in La Crosse this year was at the Tuberculosis Sanatorium, when Dr. Pleyte gave a splendid demonstration on the diagnosis of tuberculosis. It was a really good meeting.

In former years I had a good deal to say about the lack of interest in my district, quite excusable, however, in Trempealeau, Jackson and Buffalo. They, however, have been the livest county society of our district during the past year. They have been doing real work, in spite of the difficulty of getting together.

I went up to Viroqua a couple of weeks ago. They are trying to get a county nurse for Vernon County.

Monroe is pretty much asleep, and has very little excuse, because the two main towns are close together, and they could hold good county meetings and hold them more frequently than they do.

Juneau has not been doing much.

La Crosse has a good membership, and is getting along about the same as ever. I know that our State Society will be delighted to know that scientific interest was shown at the last county meeting by the fact they passed around an announcement of the tri-state, and boosted is as a splendid thing to attend compared with our State Medical Society.

THE PRESIDENT: We will now have the report from the 8th District, Dr. T. J. Redelings, Marinette, Counsilor.

DR. T. J. REDELINGS, Marinette: Mr. President and Members of the House of Delegates. Shawano County Medical Society has maintained its organization and scientific interest, holding meetings regularly.

Oconto County is a paper organization. A number of the members of the Oconto Medical Society attend the meetings of the Marinette County Society, which until Jan. 1st, 1921, was a fairly live organization. Since that time, for some reason, it has been in a dormant state.

I presume that I should take a large measure of the responsibility for this apparent death. We elected a young man to the presidency, a man who is a veteran of our recent war. We thought we were doing a wise thing. I notice however, that he has given his energy to the American Legion and its activities. Our Medical Society has suffered.

Perhaps another reason for our dormancy is the fact that we have bought our entertainment the past four or five years, and our members are loath to get down to hard work. Our Society is at present at a very low ebb.

The loss for the district is five members.

THE PRESIDENT: The report for the 9th District will be presented by Dr. Joseph Smith, Wausau.

DR. JOSEPH SMITH, Wausau: Mr. President, and Members of the House of Delegates. The 9th District shows a total loss in that district, of 28, Clark County showing a loss of 4, Green Bay-Waushara-Adams, 7, Lincoln-Marathon, same as last year, Portage, loss of 6, Waupaca, loss of 12, and Wood a loss of one. One of these counties, Waupaca, has a list of 13 delinquents.

I was not aware of that condition until a few days ago, and I wrote the secretary and he promised me to make an effort to get in some of these delinquents before this meeting. What he succeeded in doing I have not had time to learn. I think, however, the difficulty in the county was due to the fact that there seemed to be a change in secretaries recently, and only recently the new secretary was elected.

I agree with a statement that has been made here that the success or failure of most of these county societies depends upon the county secretary. In our county, we have very good results by combining our county society meetings with the University Extension course. We did it by having the local men give one or two papers in an evening, and we were rather successful in getting a fairly good representation of our members, at least in our county, interested in the Extension course. We had our meetings open to those who did not subscribe to the course; they were privileged to come if they saw fit and attend the County Society meeting and the University Extension course; in that way interest was very good. Our attendance was very good throughout the year. There was one county in the district that has held, so far as I know, no meeting this year.

We have our regular district meetings, which we have had for a number of years, 4 times a year, and I think that altogether they are the most successful meetings we have. They usually occur in May and again in July, and then in September or the early part of October, so that we get 3 meetings out of the year during the time when the roads are passable for automobiles, thus enabling men from all parts of the district to get together. Then we have a mid-winter meeting some time after the holidays. Some of these meetings are very well attended; in fact, we think all of them are. We have good programs, and we consider the meetings are really the best thing we have.

THE PRESIDENT: The 10th District, Dr. Cairns of River Falls. Dr. Cairns is not here.

The 11th District, Dr. Dodd, of Ashland. I think he is not present at this time.

We will have the report of the 12th District, Dr. Hoyt E. Dearholt, of Milwaukee, Councilor.

DR. HOYT E. DEARHOLT, Milwaukee: Mr. Chairman and Members of the House of Delegates. The 12th District, as you know, is just the Milwaukee County Society. The strength of the Society keeps up. Last year there was a membership of 426, and this year 422, a loss of 4. Sixty-two are listed on this paper as delinquent, but the Society is so large that this varies from day to day; I have no doubt it is now different. There were 2 removals and 4 deaths; 47 members were added during the year.

THE PRESIDENT: Dr. E. B. Brown, Councilor of the 3rd District is present. So we will now have his report.

DR. E. B. BROWN, Beloit: Mr. Chairman, and Members of the House of Delegates. I am a new member of the Council, so I have not as good a report to make at this time as I should like to have.

In the 3rd District we have added 30 members during the past year to the membership, but owing to the loss by removal of 9, and the somewhat larger number of delinquents than usual, we have a net loss of 13.

As for the meetings, 3 of the counties in this district

have members rather few in number and widely scattered, so that the meetings in those districts have not been very good.

In the other two counties meetings have been held every month in the year, 12 in all, and in one of the counties there was an average attendance of between 25 and 30 out of a membership of 93. In the other county the average attendance was 40 in a membership of 76. In this latter county during the past two years there have been two local physicians' clubs organized. This does not seem to interfere in any way with the attendance at the county meetings.

I think on the whole the spirit in the 3rd District is very good.

THE PRESIDENT: We will now listen to the report of the treasurer, Dr. Hall.

The report of the treasurer was presented by Dr. S. S. Hall, Ripon, as follows:

TREASURER'S REPORT.

Milwaukee, Wis., September 3, 1921.

S. S. Hall, Treasurer, in account with the State Medical Society of Wisconsin.

DEBTOR.

Balance on hand September 4, 1920	$ 5,552.71
Received from Secretary for County Dues	7,212.00
Total	$12,764.71

CREDITOR.

1920			
Sept.	5—J. P. McMahon, Wis. Medical Journal	$ 1,200.00	
1921			
Feb.	5—J. P. McMahon, Wis. Medical Journal	3,000.00	$ 4,200.00
1920			
Sept.	20—Lines, Spooner & Quarles, Matter Drs. Evans & Henke	$ 50.00	
Oct.	2—Wis. Anti-Tuberculosis Asso., a/c, 9-22-20	5.80	
	27—D. Hopkinson, Secy., Refund D. W. Lynch	4.00	
	28—Cannon Ptg. Co., 500 Gov't Postals, Wis. Med Jour	10.00	
Dec.	10—A. Currie & Co., Floral piece, Dr. Abraham's funeral	25.50	95.30
1921			
Jan.	31—Chas. H. Lemon, Delegate A. M. A., Boston	$ 71.95	
Feb.	5—D. Hopkinson, Secy., Refund Dr. Dewey	6.00	
	25—Dr. L. M. Warfield, Reservation Auditorium Milw	150.00	
Mar.	3—H. E. Dearholt, Lunch January Meeting Council	27.50	
	10—Dr. G. P. Barth, Com. Med. History, Supplies	71.40	
	G. C. Wichman, Secy Price Taylor Co., Refund E. A. Riley & D. R. Flower	8.00	
Apr.	9—Dr. Kennon Dunham, Cincinnati, Fare La Crosse	50.00	
	13—Rolla Cairns, Expense Councilor	40.70	
	22—Milw. Clinic, Com. of Arrangements	2.24	
May	7—G. P. Barth, Salary & Expense Com. of Med. Hist	62.75	
	27—St. Louis Button Co., Buttons & Ribbons, 1920	25.40	
	30—M. R. Wilkinson, Expense Councilor	5.65	
July	5—McDermott & Cowan, Report Session 1920	345.27	
	Joseph F. Smith, Delegate A. M. A., Boston	112.84	
	Rock Sleyster, Delegate A. M. A., Boston	91.84	
Aug.	5—L. F. Jermain, Chairman Hospital Com., Postage	5.00	
	W. F. Lorenz, Inspection Madison General Hospital	10.00	
	A. G. Jenner, Inspection St. Mary's Hospital, Superior	10.00	1,096.54
1921			
	4—Multigraphing Service Co., Com. P. P. & L	$ 79.44	
	4—Multigraphing Service Co., Com. P. P. & L	24.25	
	Dr. Edw. Quick, Postcards, Com. P. P. & L	19.25	
June	9—Wis. Anti-Tuberculosis Asso., Com. P. P. & L	5.25	
July	5—Multigraphing Service Co., Com. P. P. & L	66.67	194.86

1920			
Sept.	18—V. E. Coles, Expense La Crosse	$ 24.00	
	25—Cannon Ptg. Co., Expense Secretary	179.00	
Oct.	2—Siekert & Baum Stationery Co., Exp. Secy	6.75	
	Siekert & Baum Stationery Co., Exp. Secy	.30	
	5—Rock Sleyster, Expense Secy	13.65	
	27—V. E. Coles, Salary	75.00	
	28—Rock Sleyster, Stamped Envelopes	23.38	
Dec.	27—Cannon Ptg. Co., 200 Circulars	28.00	
	31—Siekert & Baum, Expense Secretary	3.28	353.36
1921			
Jan.	6—V. E. Coles, Salary	$ 75.00	
Feb.	3—Siekert & Baum Stationery Co, Expense Secy	9.15	
	14—L. C. Smith & Bros., Rpr. Typewriter, Secy.	4.25	
Mar.	16—Cannon Ptg. Co., Expense Secy	52.50	
	26—Jacks Letter Service, Expense Secy	3.58	
Apr.	2—Rock Sleyster, Expense Secretary	1.11	
	V. E. Coles, Salary	75.00	
	13—L. C. Smith & Bros., Typewriter, Exp. Secy	2.80	
May	2—Rock Sleyster, Exp. Secy	22.99	
July	5—Rock Sleyster, Telephone & Postage	9.30	
	V. E. Coles, Salary	75.00	
Aug.	15—Jacks Letter Service, Cards, Exp. Secy	34.20	
	19—Siekert & Baum Stationery Co., Exp. Secy	2.95	
Sept.	3—Rock Sleyster, postage, Exp. Secy	25.00	
	Jacks Letter Service, Exp. Secy	7.93	
	Cannon Ptg. Co., Exp. Secy	75.00	475.76
1920			
Oct.	27—Rock Sleyster, Salary, July, Aug., & Sept	$ 150.00	
1921			
Jan.	6—Rock Sleyster, Salary, Oct., Nov., & Dec	150.00	
Apr.	2—Rock Sleyster, Salary, Jan., Feb., & March	150.00	
July	5—Rock Sleyster, Salary, April, May & June	150.00	
	S. S. Hall, Salary	200.00	
	S. S. Hall, Incidentals	25.00	825.00
	Total		$ 7,240.82
	Balance		5,523.89
	Total		$12,764.71

TREASURER'S REPORT, MEDICAL DEFENSE FUND.

Milwaukee, Wis., Sept. 3, 1921.

S. S. Hall, Treasurer, in account with the State Medical Society of Wisconsin.

DEBTOR.

Balance on hand September 6, 1920	$ 3,178.84
Received from Secretary for County Dues	3,321.00
Total	$ 6,499.84

CREDITOR.

1920		
Sept. 8	Lines, Spooner & Quarles	$ 2,646.35
	Balance on hand	3,853.49
	Total	$ 6,499.84

THE PRESIDENT: This report of the treasurer will be referred to the Auditing Committee, which consists of Dr. Connell, Dr. Smith and Dr. Cunningham.

Secretary Sleyster will now present his report.

Secretary Rock Sleyster presented his annual report as follows:

REPORT OF THE SECRETARY FOR THE PERIOD FROM JANUARY 1 TO SEPTEMBER 1, 1921.

To the House of Delegates:

The following report is submitted for the year 1920-1921:

MEMBERSHIP.

The membership of the fifty-four constituent county societies, according to the records in the Secretary's office on September 1, 1921, was 1770. The total membership for the year 1920 was 1927. This is shown in the accompanying tables which indicate the 1920 and 1921 membership, with losses and gains, delinquents, removals, deaths and new members for each county society and for each district in the State.

These tables show that for the first time in the history of the society we passed the 1900 mark last year and made a net gain of 66 members. Our records September first show that 1770 have paid 1921 dues which is a falling off of 55 from the report given at the La Crosse meeting a year ago. We believe, however, that this will be made up before the first of January and the 1921 membership will at least equal that of the preceding year.

Collections have been slower this year, possibly because of harder times and partly due perhaps to the raise in dues. Any prophesies, however, that the society would suffer any severe losses of membership through the raise in dues has been disproved.

From an organization standpoint, conditions are very satisfactory indeed and we continue the best organized of western states.

STATE MEDICAL SOCIETY OF WISCONSIN.

MEMBERSHIP REPORT.

September 1, 1921.

County Society	1920	1921	Loss — Gain +	Delinquent	Removals	Deaths	New Members
1st District—							
Dodge	34	31	—3	4	1	0	1
Jefferson	32	28	—4	4	1	0	1
Washington	15	13	—2	2	0	0	0
Waukesha	45	44	—1	1	1	0	0
	126	116	—10	11	3	0	2
2nd District—							
Kenosha	43	40	—3	3	0	1	1
Racine	47	45	—2	3	1	1	3
Walworth	19	13	—6	11	0	0	0
	109	98	—11	17	1	2	4
3rd District—							
Columbia	30	28	—2	5	0	0	3
Dane	111	103	—8	11	6	0	9
Green	21	19	—2	0	2	0	0
Rock	72	76	+4	3	4	2	13
Sauk	27	31	+4	3	0	0	6
	261	257	—4	22	10	2	31
4th District—							
Crawford	5	5	0	0	0	0	0
Grant	40	40	0	0	2	0	1
Iowa	12	11	—1	2	1	0	2
Lafayette	14	0	—14	14	0	0	0
Richland	17	15	—2	2	0	0	0
	88	71	—17	18	3	0	3
5th District—							
Calumet	17	15	—2	2	0	0	0
Manitowoc	34	28	—6	5	1	0	0
Ozaukee	9	10	+1	0	0	0	1
Sheboygan	43	45	+2	2	0	1	3
	103	98	—5	9	1	1	4
6th District—							
Brown-Kewaunee	46	45	—1	6	0	1	3
Door	9	4	—5	3	2	0	0
Outagamie	35	35	0	2	2	2	5
Fond du Lac	59	52	—7	6	5	0	4
Winnebago	59	53	—6	4	5	0	3
	208	189	—19	21	14	3	15
7th District—							
Juneau	10	9	—1	1	0	1	0
La Crosse	51	51	0	3	4	0	7
Monroe	18	21	+3	0	0	0	3
Trempealeau J. B.	27	26	—1	1	1	0	1
Vernon	16	14	—2	2	1	0	1
	122	121	—1	7	6	1	12
8th District—							
Marinette F.	21	17	—4	5	1	0	1
Oconto	13	13	0	0	0	0	0
Shawano	19	16	—3	1	2	0	0
	53	46	—7	6	3	0	1
9th District—							
Clark	12	8	—4	2	1	1	0
Green Lake W. A.	22	15	—7	5	1	1	0
Lincoln	16	16	0	0	0	0	0
Marathon	41	41	0	1	1	1	3
Portage	24	18	—6	4	1	1	0
Waupaca	32	23	—9	10	0	1	2
Wood	23	24	+1	0	1	1	2
	170	145	—25	22	5	6	7

10th District—							
Barron P. W. S. B.	38	38	0	4	0	0	4
Chippewa	20	15	—5	4	1	0	0
Dunn-Pepin	20	18	—2	5	0	0	2
Eau Claire	37	37	0	5	1	0	6
Pierce	9	6	—3	2	0	1	0
Rusk	8	8	0	1	0	0	1
St. Croix	15	15	0	1	0	0	0
	147	137	—10	22	2	1	13
11th District—							
Ashland B. I.	21	18	—3	4	1	0	1
Douglas	40	36	—4	5	0	1	2
Langlade	14	14	0	0	0	0	1
Oneida F. V.	13	8	—5	6	1	0	0
Price-Taylor	13	14	+1	0	0	0	0
	101	90	—11	15	2	1	4
12th District—							
Milwaukee	406	402	—4	62	2	4	47
Totals	1894	1770	—124	232	52	21	143

DIGEST OF TABLES.

At this time, no district shows a gain, each showing a loss, the greatest loss being in the ninth district with a loss of 25; then the sixth with a loss of 19; the fourth, 17; the second and eleventh, 11; the first and tenth, 10; the eighth, 7; the fifth, 5; the third and twelfth, 4, and the seventh, 1.

The twelfth district has 62 delinquents; the third, ninth and tenth, 22; the sixth, 21; the fourth, 18; the second, 17; the eleventh, 15; the first, 11; the fifteenth, 9; the seventh, 7; and the eighth, 6.

The twelfth district has 47 new members; the third, 31; the sixth, 15; the tenth, 13; the seventh, 12; the ninth, 7; the second, fifth and eleventh, 4; the fourth, 3; the first, 2; and the eighth, 1.

Seven counties show a gain; 35 show a loss and 12 remain the same.

Rock and Sauk Counties show a gain of 4 each; Monroe, 3; Sheboygan, 2; and Ozaukee, Wood and Price-Taylor, 1 each.

Lafayette County shows the greatest loss, with a loss of 14; Waupaca shows a loss of 9; Dane, 8; Green Lake W. A. and Fond du Lac, 7; Walworth, Manitowoc, Winnebago and Portage, 6; and Door, Chippewa and Oneida F. V., 5 each.

Green, Crawford, Grant, Ozaukee, Monroe, Oconto, Lincoln, Wood, Langlade and Price-Taylor Counties have no delinquents. Milwaukee County has 62; Lafayette, 14; Walworth and Dane, 11 each; Waupaca, 10; Fond du Lac, Brown-Kewaunee, and Oneida-Forest-Vilas, 6 each; Columbia, Manitowoc, Marinette-Florence, Green Lake-Wausara-Adams, Dunn-Pepin, Eau Claire and Douglas Counties, 5 each.

Thirty-two counties report 143 new members. Milwaukee has the largest number, with 47; then Rock with 13, Dane, 9; La Crosse, 7; Sauk and Eau Claire, 6 each. and Outagamie, 5.

Total membership, Dec. 31, 1918	1834
Total membership, Dec. 31, 1919	1861
Total membership, Sept. 1, 1921	1770
Total membership, Dec. 31, 1920	1894
Delinquents, Dec. 31, 1919	78
Delinquents, Dec. 31, 1920	95
Delinquents, Sept. 1, 1921	232
Deaths and removals, Dec. 31, 1919	53
Deaths and removals, Dec. 31, 1920	80
Deaths and removals, Sept. 1, 1921	73
New members, Dec. 31, 1919	113
New members, Dec. 31, 1920	157
New members, Sept. 1, 1921	143

The membership report given above is satisfactory and, as usual, I wish to give the over-worked and, I fear, the often unappreciated county secretaries full credit.

The sudden death of Dr. Henry W. Abraham, Appleton, president-elect of the State Medical Society, on November 22, 1920, came as a shock to the members of the profession which he loved so much. Few, if any, Wisconsin medical men were held in higher esteem. He died in the harness as he would have wished to leave.

He was called on an obstetrical case at three o'clock that morning. At eight, he was taken suddenly ill and died at four o'clock the same afternoon.

Dr. Abraham had been Councilor of the sixth district for many years and was one of the oldest members of the State Board of Medical Examiners. One can not find words to express our appreciation of the man and his devotion to the profession he was elected to head this year. A week before his death, I wrote Dr. Abraham, asking him for an editorial for the Journal. His response, an editorial entitled "An Obligation" was finished the day before he died and was the very last thing he wrote. It was published in the December issue of the Journal and I should like to incorporate it and read it as a part of this report, for it seems divinely inspired.

AN OBLIGATION.

By Henry W. Abraham.

The preparation of a physician for his life's work depends on the careful and complicated organizations that have carried him through his education from the kindergarten to his M. D. degree, and these organizations have been evolved through a slow and laborious process, touched with much unselfish labor by many individuals for the benefit of us all. How are we using our patrimony? Do we acknowledge the debt to those who labored so hard and persistently that we might benefit by the fruits of their labors? That is a question that every physician should ask himself. Is he doing all he can to put his loved profession on the highest plane—to approach his ideal? Does he have the feeling that his work has added, not only to the scientific, but also to the moral and humanitarian achievements of the profession? Such a self quizzing occasionally is good for the soul and helps to keep us on the straight and good road laid out in our more youthful and idealistic days.

The men who founded the American Medical Association and those who continued and amplified their good work until it has penetrated every nook and corner of this country of ours are looking to each one of us to carry on.

Is it not possible for us to be more fully imbued with the spirit of their ideals so that we may be more faithful in this labor which has its reward in doing? The fellowships, the exchange of ideas, the leveling of egoisms, the inspirations for better work and a better life that are engendered in these face to face meetings have no substitutes.

Let us then as members of our medical society, which has done so much for us, put some push into our efforts to attend every meeting. And we should remember that attendance at our county, state and national meetings should always come first in our preference for they are the foundation stones of our existence as an organized profession.

Dr. Abraham's place as president has been ably filled during the year by Dr. M. A. McGarty of La Crosse, to whom the association is indebted for a most capable administration of its affairs.

SEVENTY-FIFTH ANNIVERSARY.

This meeting marks the 75th birthday of the organization. It was only fitting that the occasion be celebrated with a birthday party which should do honor to a society which has accomplished so much for the State of Wisconsin in three-fourths of a century of usefulness.

The 1920 House of Delegates decided that it should be a home-coming meeting and all former Wisconsin physicians living outside of the State of whom we could learn were cordially invited to return at this time. They are more than welcome home and I hope every member of the association in attendance will feel that he is one of a committee of 1900 members delegated to form a reception committee.

STATE ACTIVITIES.

The Handbook mailed to you contains the reports of the various committees and tells of the activities of the society. These reports will be read before this session of the House and do not require other attention.

You will note a tone of discouragement in the report of the Committee on Public Policy and Legislation. Much important legislation was introduced at Madison last winter and, as usual, though fully advised, the membership of this society responded poorly. The committee and your officers and others worked hard and faithfully but it seems that numbers count and the general support given your committee compared but poorly with the support given the chiropractors and Christian Scientists.

It is my suggestion that a better organization be effected for legislative work during the coming two years. I believe the best solution to be an enlargement of the committee to include the Councilors and that each Councilor be made responsible for the support which should be expected in his district; the committee of three to act in its usual capacity and to keep each Councilor informed as to what is expected of him.

In this connection, I wish to offer a word of explanation as to the action of the Council at its January meeting regarding which there seems to be considerable misunderstanding. The Council did not vote to take no interest in legislative matters but rather that the policy outlined should be that the State Society would not engage in legislative matters as active lobbyists; explaining to the legislature that the responsibility for medical and public health legislation was on their shoulders, not on ours, but explaining that the State Society was ever ready to act in an advisory capacity. The action was taken purely for the psychological effect in trying to force on the legislature a realization of their responsibility in these matters. It did not commit the society to a policy of indifference and the legitimate activities of your committees and your officers were in no way lessened.

The question of medical legislation was given careful attention by the 1921 House of Delegates of the American Medical Association and the board of trustees was instructed to investigate the feasibility of a full time executive secretary with a legal cabinet whose duties it should be to follow all legislation—state and national—through an organization to be formed throughout each state. This will, doubtless, result in a legislative department of the American Medical Association which will give us expert advice and assistance in these matters and should be most helpful.

Questions such as these, together with the larger questions such as the relation of the profession to the public, state medicine, social insurance, sects in medicine, unanswered and dishonest newspaper advertising of these sects, the campaigns against vaccination, etc., etc., are all important and momentous subjects on which we should individually be informed and ready to act. They apply equally, however, to every other state in the Union and their solution is more a national than a state issue—that they are not being ignored is shown in the report of your delegates to the American Medical Association which, with its splendid membership facilities, equipment and financial power, is best able to study these questions and outline what can be done.

The 1921 House of Delegates of the American Medical Association has instructed the board of trustees and various councils to work along these lines and prepare constructive policies for the coming year.

HISTORICAL RESEARCH.

The 1919 House of Delegates authorized the publication of a history of Wisconsin medicine and appropriated for the purpose the sum of $500. Responsibility for this work has been assumed by Dr. George P. Barth of Milwaukee, who has been collecting historical material of a medical nature for the past twenty years. The book will be published during the coming year.

POSTGRADUATE MEDICAL INSTRUCTION.

The University Extension Division at Madison has

continued its postgraduate medical instruction throughout 1921 and courses have been given in twelve different counties. In addition to these courses, the Extension Division has collected a complete set of anatomical models and a large number of films and lantern slides which are available and which will be loaned without cost to physicians, medical societies, nurses' training schools, public health organizations, etc.

Printed lists of these together with booklets descriptive of the postgraduate courses available can be found at the registration desk at the Auditorium.

This work was made available at the resquest of this organization. It is yours for the asking and with your support the University is confident that it can be extended and be made more valuable.

The moving picture on obstetrical subjects to be shown Wednesday night has been made available through this agency. A rental of $275 was demanded for the night. The Extension Division found it could purchase the film for $800 and offered to pay $600 of this cost if the State Society would pay the remaining $200. This makes the rental less than it would have been and makes the film ours to be sent out to the county societies throughout the State. It will call for an appropriation of $200 by this House for that purpose.

In closing, let me remind you as I have each year, that the activities of the organization are in no way confined to an annual meeting. The officers and committees which you elect are working in your interest and in the interests of the people of the State of Wisconsin every day of the year. They are your officers, and your committees. This is your Society and your Journal. They are owned and supported by you so make good use of them. They are always at your service.

Respectfully submitted,

ROCK SLEYSTER,
Secretary.

THE PRESIDENT: It has been the custom in the past to refer the elections covered in Nos. 20, 21 and 22 to the Nominating Committee. If that is your wish we shall do that at this time, or they can be elected here on the floor of the House of Delegates. What is the wish of the delegates with regard to Nos. 20, 21 and 22?

DR. WILSON CUNNINGHAM, Platteville: I move that these nominations be referred to the Nominating Committee.

Motion seconded.

Motion put and carried.

SECRETARY SLEYSTER: Mr. Chairman and Gentlemen. In this connection I would like to say to the Nominating Committee that there are a few changes. Under No. 21 you will note that the regular Councilors to be elected this year are Dr. Smith and Dr. Cairns. It will be necessary also to elect a Councilor in place of Dr. Abraham, who died during the year, his place having been filled by Dr. Connell, who was appointed by President Bardeen to take care of the work until a successor to Dr. Abraham could be elected.

I have in this morning's mail a letter from Dr. F. T. Nye to the House of Delegates, as follows:

"I hereby tender my resignation as Councilor for the 3rd District. I wish to heartily thank both yourself and the Council for your patience and forbearance with me. Fraternally yours, F. T. Nye."

So that will require the election of a Councilor for the 3rd District. The House of Delegates at the La Crosse meeting last year elected Dr. E. B. Brown, of Beloit, as vice-councilor, to carry on Dr. Nye's work during the year.

Under No. 22, on page 8, there is an error. The Committee on Medical Defense is not elected by the House of Delegates, it is appointed by the Council.

On the Committee on Hospitals, the House of Delegates last year gave a term for each member of this committee, so that the term of office of only one member of the committee would expire each year, and Dr. Connell's term expires this year, so there will be just one member on this Hospital Committee to be elected, a man to succeed Dr. Connell.

THE PRESIDENT: We are now under the head of "Miscellaneous and New Business." Has anyone any new or miscellaneous business to bring up?

DR. W. F. LORENZ, Mendota: Mr. President, I assume that it would be proper to bring up at this time a matter with relation to the program. The action of the House of Delegates about 3 years ago resulted in the sectional arrangement of our programs. Two years ago, I believe, the initial effort was made to have sectional meetings and a sectional program. I doubt very much whether that was a success. Certainly last year's meeting as a sectional meeting was not a success. I therefore move that we resume our original system or method of having only general sessions, devoting any portion of the general session to a special topic if it is so desired by the Program Committee.

THE PRESIDENT: Is that a motion, Dr. Lorenz?

DR. LORENZ: Yes.

Motion seconded.

THE PRESIDENT: Are there any questions? You have heard Dr. Lorenz's motion. All those in favor will signify by saying "aye"; opposed, "no".

Motion carried.

THE PRESIDENT: It there any further new business to come before the House of Delegates?

DR. W. F. ZIERATH, Sheboygan: Mr. President and Gentlemen. I want to discuss for a moment a topic concerning public health and public legislation, which probably will not come under the report of the Committee on Public Health and Legislation, and that is the bill that was recently defeated in the last legislature, concerning the chiropractors. This bill was initiated by Dr. O. B. Bock, of Sheboygan. He was inspired to do it by an address delivered before the Rotary Club in Sheboygan, by the head of the Chiropractic School. He got into a newspaper controversy with a chiorpractor in Sheboygan, and took his revenge in this way. I am sorry he is not here to tell you his experience at the legislature as a lobbyist. Dr. Bock goes into a thing

wholeheartedly, and he spent several hundred dollars of his own money in going to Madison and lobbying for his bill, and a great deal of his time. His experiences down there are interesting and entertaining, concerning the reception that the medical man or any trained professional man gets at the hands of the legislators. Nothing can be accomplished by an organized body of medical men going down there and trying to persuade those men to do something that is right and in the interest of the people. If the medical profession advocates anything, there must perforce be a nigger in the wood-pile somewhere, and the medical profession is going to be the gainer by it. It has occurred to me that the only way we can ever accomplish anything along the line of legislation on medical matters is by propaganda that is conducted by the laymen. It is useless for a doctor to attempt to persuade those men to do anything, or for the Committee on Public Policy and Legislation to attempt to do anything. If we can organize the laymen throughout every county in the state and persuade them to take up our burden, something can be accomplished. There is no use in having the doctors go down there. Bock is thoroughly discouraged, but he is willing to take another crack at it two years from now. I do not know what the policy of the new committee will be, but I want to take advantage of this opportunity under the head of New Business to just advocate that thing of trying to get the laymen to go down to the legislature and fight our battles.

Dr. Joseph Smith, Wausau: Mr. Chairman and Gentlemen. I think we had a good deal of discussion on this same subject in the Council meeting last year, and I believe it has been the feeling that attempts at lobbying at Madison have quite uniformly failed. Last year, during the session of the legislature, I received a number of communications, as I think most of you also did, about pending legislation, and was asked to see our local assemblyman and senator. And I found that by seeing these men personally I was able many times to get a very intelligent impression into their heads in regard to pending legislation, and quite generally I was gratified to find that they were on the right side of the question when the matter was explained to them. I believe that therein lies the only chance that we have to successfully shape legislation, and that is by carrying our campaign out into the councilor districts and into the counties themselves, and making it a personal matter. Nearly every county has some physician in it who has at least the respect of the assemblymen and senators, and if we select the right man to go and see these legislators and talk to them personally, I think a great deal can be accomplished.

Dr. G. Windesheim, Kenosha: Mr. President and Gentlemen. I have to object to one of the expressions that Dr. Zierath used. He said that we ought to get the public to fight our battle. Why not let the public fight its own battle? It is a battle for the public. It is a question for the public. Try to impress the public with that idea that health legislation is primarily beneficial to the public and not to the doctor, and I think we will meet with better success.

Dr. Otho Fiedler, Sheboygan: Mr. Chairman and Gentlemen. It strikes me that the matter of obtaining legislation requires simply the application to it of the same general principles of conservation of resources that we use in regard to material resources. If the report of a committee of a hundred which was made to Theodore Roosevelt when he instituted his research along the line of maintenance of national efficiency could be brought into the hands of the average man, there is not any question as to where he would stand on matters of public legislation and health matters; and I believe that we really are not going to get so very far by a great deal of state legislation; it is going to be a local fight here and there, and we will get nowhere. It seems to me we ought to turn our attention to the establishment of a national bureau, which should not have any concern with regard to doctors at all, but should be a department that had for its function maintenance of the national efficiency. And as a department of that, the maintenance of vital resources, which means increasing longevity and decreasing morbidity; and that general proposition is a national proposition. National efficiency will get across, because it has an economic bearing, and the rest of it does not have that. And that is the way you have to teach things, make the American people see that increasing life and diminishing sickness means dollars and cents to the state, and you will get across with it.

The President: Is there further discussion of this subject?

Dr. Hoyt E. Dearholt, Milwaukee: Mr. President and Gentlemen. I want to disagree with one remark of Dr. Zierath, and that is that the members of the legislature are muckleheads, or anything of that sort; they are not; they are just plain ordinary men, with just about the same understanding of things that we have. I feel absolutely as Dr. Smith does, that it is largely a question of the matter being put up to them in language that they will understand, and patiently. I do not think that we doctors as a rule are any too patient when we try to convince a legislative committee of the merits of our side of the case. We see it so clearly ourselves that we get impatient with those other fellows who do not see it and who do not know the use of language very well. He has not our prejudices, our viewpoints, our education, and he does not understand that which we understand so thoroughly. It seems to me it is a question first of all, of getting the sympathy and the understanding of these men, and that then we can depend upon them to do just about what any other good class of American citizens will do. I do not want to think anything else, because if I did I would feel that all of the struggles that pertain to democracy in the world have been an absolute wrong to the world and to society. I am a firm believer in what Dr. Zierath has suggested, that it is the non-medical advocates, the people themselves, as Dr. Windesheim also very well said, going out and advocating the measures for their own protection. They will get much further than we can get by a very small amount of divided attention that doctors can give the matter. And as I say, we have a tendency of being rather impatient with these men for not understanding

that which we ourselves understand so thoroughly well.

I was one of the Councilors, and have been for years an advocate of this idea of carrying on a propaganda. I just want to recite a little experience. When I was conducting a column in the newspapers, a health column, I used once in a while to slip over a health editorial commending the medical profession to the lay public, and it is a very interesting thing to note that invariably I did not get more than one-third as many newspapers to print any article that I wrote that had a commendatory note in it about the medical profession, as I did for my general average stories. And this ought to be an eye-opener to the doctors. The newspaper editors themselves have not been made as good friends of medicine, and scientific medicine—the best of medicine— as we doctors should make it our business to make them. We have got the case; scientific medicine must be right; and if these men do not understand it, these newspaper editors, who are the molders of public opinion, it must be our fault that we have not succeeded in getting it across to them in a way they can understand.

Dr. Franz Pfister, Milwaukee: I just want to inform Dr. Dearholt that we forget the influence of those chiropractic advertisements in the papers. It is a power that is apt to direct and mold the opinion of the writer.

Dr. Joseph Smith, Wausau: Mr. Chairman and Gentlemen. During the last year I happened to be brought into rather close contact with a newspaper man, and on several occasions he discussed some of these very important matters with me, and he stated to me frequently, that one of the troubles that they had in getting news before the public was the fact that most of the discussions that the doctors hold are in such language that the average newspaper reporter does not understand it, and does not get it plainly. He pointed out to me on several occasions the reason why some of his sectarian propaganda gets through so much more efficiently than the medical is because the average reporter who, as a rule is not a man of very high intellectual attainment, does not get it in such simple words that he can understand.

Dr. Warfield, in a little conversation I had with him a few moments ago presented a very good idea about some matters of medical education, and I think we ought to extend him the privilege of talking a few minutes. I should like to hear from him.

The President: Did you have something to say, Dr. Dearholt?

Dr. Hoyt E. Dearholt, Milwaukee: Only to reply to my friend Franz Pfister's remark. It seems to me that when a doctor says that newspapers as a whole haven't any ethical sense, but have their editorial opinions colored solely by the question of whether somebody advertises in their press, then he is doing the same thing precisely toward what I believe to be a very honorable and ethical profession of high-minded men, taken as a whole. There are quacks editing newspapers, just as there are quacks practising medicine, but I think as a whole newspaper men have a very high ideal of ethics and a very high sense of their public and civic responsibility; and I believe that when, as I say, one of we doctors says that those men have an unethical sense, or a purely selfish one, that we are inviting them to turn right around and question our motives whenever we go before the legislature and ask for something for the public good. We have all heard of newspapers having made great sacrifices, and risked their very existence in attacking abuses and attacking disorders.

Dr. L. M. Warfield, Milwaukee: Mr. President and Gentlemen. I am not a member of the House of Delegates, and I only rise because I feel it may be that what I have to say will be of interest to the delegates and to the profession. It has occurred to me that we all know that the most plastic period of life after all is the child life. Now, looking back over the history of medicine, we find the most fascinating stories that one could possibly bring out. Take for example the story of the malarial campaign, the story of the fight against yellow fever, the story of the fight against the Rocky Mountain spotted fever, all of those are fascinating, and in telling them, as I have had occasion to in talking to kind of ordinary intelligent individuals, I find that they have no conception of just what the medical profession has done. It seems to me as I have been thinking over the matter, that it is perfectly possible and feasible for the physicians who have to do with school inspection, to give lectures, if necessary illustrated, to the classes of children, frequent lectures, taking up one by one the history of the fight against these various epidemic diseases, and to show what the medical profession has really done, not alone for the individual right here as you treat him in his home, but for the good of the world at large. I think that sort of propaganda will do more to fight the insidious propaganda, such as is practised by the Christian Scientist, osteopath, chiropractor, etc., than anything we could do. I will admit that it might cause friction in the homes of Christian Scientists if the children told what the medical profession had done to stamp out typhoid fever and malaria, but it seems to me it would be a leaven sown so that it would bring forth a considerable amount of fruit. I simply offer it as a suggestion, and do not see why it would not be a very feasible thing to do.

Dr. Edward Kinne, Elkhorn: Mr. President, there is a matter that was brought up by the secretary in his report, which might be acted upon under this head of miscellaneous and new business, and that is the appropriation of $200 to pay for the films which the Medical Society have agreed to buy with the State Board of Health.

Secretary Sleyster: Yes.

Dr. Kinne: I move that we appropriate $200 to pay our share of the cost of those films.

The President: Is there any question or discussion? You have heard Dr. Kinne's motion.

Motion seconded.

The President: All those in favor of Dr. Kinne's motion will respond by saying "aye"; opposed, "no".

Motion carried.

The President: Is there further business before we

adjourn? I want to say that the House of Delegates will meet to-morrow morning at 8:30 at the Auditorium. Everybody try to be there on time, because the general sessions start at 9 o'clock, and there is a very long program.

Motion to adjourn made, seconded and duly carried.

HOUSE OF DELEGATES.

SESSION WEDNESDAY MORNING, SEPT. 7, 1921.

8:30 a. m.

Meeting called to order by the President.

Minutes of last meeting read and approved.

THE PRESIDENT: I want to impress upon everybody that there is a very important meeting to-morrow morning in this hall at 8:30, at which the reports of the committee on officers will be read.

Is there any new business?

DR. JOSEPH SMITH, Wausau: There is one matter that probably should be brought up at this time. At the meeting of the House of Delegates last night it was thought best to make the Councilors of the Society ex officio members of the Committee on Public Policy and Legislation. This will necessitate an amendment to our constitution and by-laws, and I would like to make a motion at this time that the secretary be authorized to draft an amendment to the constitution and by-laws so as to make the Councilors ex officio members of this Committee on Public Policy and Legislation.

Motion seconded.

THE PRESIDENT: You have heard Dr. Smith's motion. Is there any discussion?

DR. W. F. ZIERATH, Sheboygan: Dr. Windesheim is the authority on constitution and by-laws. Is that necessary? It will take two years before that will go into effect, Dr. Smith, if I remember rightly.

SECRETARY SLEYSTER: No, it just lies on the table one day before action, Dr. Zierath.

THE PRESIDENT: Are there any further questions, or is there any further discussion?

DR. G. WINDESHEIM, Kenosha: Mr. President, I was a little late in getting in and did not understand quite what the suggestion was.

SECRETARY SLEYSTER: This relates to making the Councilors ex officio members of the Committee on Public Policy and Legislation. The motion can be acted on this morning, but the matter will have to lie on the table for 24 hours and be acted on again to-morrow.

THE PRESIDENT: You have all heard Dr. Smith's motion. All those in favor will signify by saying "aye", contrary, "no".

Motion carried.

THE PRESIDENT: This matter will be acted on to-morrow. Is there any further new business? Dr. Sleyster, have you any further new business?

SECRETARY SLEYSTER: I have no further new business, Mr. President. There will be a great deal of new business tomorrow morning after the report of Committee on Officers and Committees, so the session to-morrow morning will be a long and busy session, and I think it is very important that the delegates be here at 8:30 sharp. Some of the matters coming up are of vital importance to the Society, and I beg of you to be here on time.

THE PRESIDENT: A motion to adjourn is in order.

Motion to adjourn made, seconded and carried.

HOUSE OF DELEGATES.

SESSION THURSDAY MORNING, SEPT. 8, 1921

8:30 A. M.

Meeting called to order by the President.

THE PRESIDENT: We will have the minutes of the previous meeting read.

Minutes of previous meeting read and approved.

THE PRESIDENT: Gentlemen, we will now have the report of the Committee on Nominations.

DR. OTTO FIEDLER, Sheboygan: The secretary has the report of the committee, and will read it.

Report of Nominating Committee presented by the secretary, Dr. Joseph Smith, Wausau, as follows:

"Milwaukee, Wis., Sept. 6, 1921.

To the House of Delegates of the Wisconsin State Medical Society:

Your nominating committee begs to submit the following recommendations for officers for the coming year.

For President, Dr. S. S. Hall, Ripon, Wis.

For 1st Vice-President, Dr. Louis M. Warfield, Milwaukee, Wis.

For 2nd Vice-President, Dr. Spencer Beebe, Sparta, Wis.

For 3rd Vice-President, Dr. Rolla Cairns, River Falls, Wis.

Councilor 9th District, Dr. Joseph F. Smith, Wausau, Wis. (To succeed himself).

Councilor 10th District, Dr. R. E. Mitchell, Eau Claire, Wis. (To succeed Dr. Rolla Cairns of River Falls.)

Councilor 6th District, Dr. Gregory Connell, Oshkosh, Wis. (To succeed Dr. H. W. Abraham, deceased).

Councilor 3rd District, Dr. E. B. Brown, Beloit, Wis. (To succeed Dr. Nye, resigned).

Committee on Hospitals.

Dr. Jos. Lettenberger, Milwaukee. Term, 1 year. (To succeed Dr. F. G. Connell, Oshkosh).

Committee on Public Policy and Legislation.

Dr. Edward Quick, Milwaukee.

Dr. Geo. Ruhland, Milwaukee.

Dr. O. B. Bock, Sheboygan.

On motion of Dr. Lorenz it was recommended that the Constitution and By-laws be so amended as to make the Councilors of the Society ex officio members of the Committee on Public Policy and Legislation.

Committee on Medical Education.

Dr. L. F. Jermain, Milwaukee.
Dr. Edward Evans, La Crosse.
Dr. C. R. Bardeen, Madison.

Delegate to Council on Medical Education of A. M. A.

Dr. L. F. Jermain, Milwaukee.

Delegate to Council on Health and Public Instruction of A. M. A.

Dr. G. Windesheim, Kenosha.

Committee on Health and Public Instruction.

Dr. W. D. Stovall, Madison.
Dr. W. H. Washburn, Milwaukee.
Dr. Ira F. Thompson, Madison.

Committee on Publication.

Dr. Oscar Lotz, Milwaukee.
Dr. H. E. Dearholt, Milwaukee.
Dr. Joseph F. Smith, Wausau.

Delegate to A. M. A. to succeed Dr. C. H. Lemon, deceased.

Dr. Joseph F. Smith, Wausau.
Alternate, Dr. W. F. Lorenz, Mendota.
Place of next meeting, Milwaukee.

Respectfully submitted,
Joseph F. Smith,
Secretary.
O. Fiedler,
Chairman.

Dr. W. F. Zierath, Sheboygan: I move that the report of the committee be accepted as read, with the recommendations.

Motion seconded.

The President: You have heard the report of Dr. Smith. Is there any discussion? If not, all those in favor of this motion will respond by saying "aye", contrary "no".

Motion carried.

The President: We will now hear the report of the Reference Committee.

Report presented by Dr. W. F. Lorenz, Mendota, as follows:

Mr. Chairman and Gentlemen: The Committee on Officers and Committees' reports begs to make the following report:

"It is recommended that the committee on Medical Defense consist of 5 members, who shall be elected this year for terms of 1, 2, 3, 4, and 5 years respectively, and that at subsequent elections the term will be for 5 years. I might explain that these recommendations pertain to the report made by the chairman of the Committee on Medical Defense, Dr. Reineking.

After consultation, the committee begs to make this further recommendation:

After consultation with officers of the Society and careful consideration, we conclude that the defense fees be not raised at this time, with the exception: your committee recommends the adoption of the rules and regulations outlined in the report made by the Committee on Medical Defense."

The President: Gentlemen, you have heard the report of the committee, what do you wish to do with it?

Dr. Otho Fiedler, Sheboygan: I move that the report be accepted.

Motion seconded.

The President: Is there any discussion? It has been moved and seconded that this report as offered be accepted. All those in favor will signify by saying "aye", opposed "no".

Motion carried.

The President: Is there any new business?

Dr. G. Windesheim, Kenosha: Mr. President, any amendment to the by-laws must be presented to the House of Delegates in writing one day, and acted on the next day.

Secretary Sleyster: It was presented yesterday, Doctor, but not in writing.

Dr. Windesheim: It must be presented in writing, unless you want to suspend the rules. It is only a by-law rule, and you can suspend it for special purpose. It is not in the constitution, only in the by-laws.

Dr. Hoyt E. Dearholt, Milwaukee: That was in the report of the committee.

Dr. Windesheim: The report of the committee is all right, but it must be presented in writing, to change the By-Laws.

Dr. Joseph Smith, Wausau: I think that practically it is presented, because I have it written in the report, and it was presented the other day in that form.

Dr. Windesheim: That is only a recommendation of the committee.

Dr. Smith: Well, it is presented in writing.

Dr. Windesheim: It is not an amendment to the by-laws, it is only a recommendation of the committee. The only thing that this House of Delegates can do is to make a motion to suspend the rules and have the by-laws amended according to the report of the committee.

Dr. H. A. Robinson, Kenosha: Mr. President, then I make the motion that the rules be suspended and that this report be accepted as an amendment to the by-laws.

Motion seconded.

The President: You have heard the motion put by Dr. Robinson. All those in favor will signify by saying "aye", opposed, "no".

Motion carried.

The President: The secretary tells me there is a doctor here from Kilbourn, who would like to have the floor to tell about the bringing of the meeting to Kilbourn next year. I will call on you, Doctor, at this time.

Dr. S. S. Hall, Ripon: The place of meeting has already been decided upon in the report of the committee which you have adopted.

Dr. H. E. Dearholt, Milwaukee: That was the recommendation.

Secretary Sleyster: The matter has been decided, but the Doctor was sent by the profession of Kilbourn

and the Kilbourn Commercial Club, and I thought we ought to at least extend him the courtesy of the floor, and give Kilbourn a chance to be heard.

Dr. W. F. Zierath, Sheboygan: The Council decides the place of that meeting in the January meeting of the Council.

Secretary Sleyster: It has usually been referred to the Council, but ordinarily the House of Delegates suggests the place of meeting.

Dr. Zierath: I thought we had absolute authority in that respect.

Secretary Sleyster: No, it has just been referred to the Council.

Dr. R. D. Boynton, Kilbourn: Mr. President and Gentlemen. The question of a place of meeting for the 1922 convention came up in a little discussion at La Crosse, and when it was suggested that I had been sent by the profession of Kilbourn, and had invitations in behalf of the city council and the Commercial Club or Chamber of Commerce there, to extend an invitation to this Society to meet in Kilbourn this year, your secretary suggested at that time that, this being a Home-Coming meeting, he thought the place for it was at Milwaukee. He intimated that another year such an invitation no doubt would be entertained, and so we just dropped the matter at that stage of the game, and held it up until this year. The invitation of the profession, of the Chamber of Commerce and of the city, has been extended in writing to your secretary, as your representative, at this session, and I do not know as I can report on it to any extent at all, simply that we felt we would like to have the state meeting at Kilbourn. A good many of those that were in attendance at La Crosse seemed to think they got more out of the meeting because of the fact that there was a less number of counter attractions and things of that kind that pull the fellows away from the meetings in Milwaukee. Now whether that is true or not is up to each individual person to determine, I think.

As far as the housing proposition is concerned, that is, the hotels and other conveniences of that kind, there is no question but what we can take care of you there. The same is true of convention halls. We have 7 good-sized meeting places there. I believe it was the suggestion of the Commercial Club, or of the profession, I have forgotten which, anyway, somewhere in one of the invitations, that one day be added to the regular program of the meeting to give the city an opportunity to show the guests the natural wonders in Kilbourn. It is needless for me to go into any description of the Dells, or any of the attractions there which might add to bringing a large meeting to Kilbourn; but as far as the facilities for handling the meeting are concerned, I do not know as we have any place in the state, if I do say it, any better perhaps than we have there, because of the fact that we have 24 hotels, and as I said before, large number of meeting halls. I do not know of any city in the state that has as many hotels outside of Milwaukee, as has Kilbourn.

On behalf of the profession and the Commercial Club, of which I happen to be the secretary, and knowing the sentiment of the city as a whole also, we were wholehearted in extending this invitation. And while your Nominating Committee has already disposed of that question, as I understand it, we feel that we would like to have the meeting come there, because of the expression of so many of the members that they really got more out of the La Crosse meeting simply because of the fact that they all got together there, and there were not so many counter attractions. I thank you.

The President: Is there any further discussion?

Dr. G. Windesheim, Kenosha: Mr. President and Gentlemen. I am very sorry that the Nominating Committee has acted on this question before it came before the House. I think that Kilbourn would be an ideal place for a meeting. I would suggest that this question of Kilbourn being a meeting place for the State Medical Society be seriously considered next year, if the offer of Kilbourn will still be open.

Dr. Otho Fielder, Sheboygan: Mr. President and Gentlemen. In deciding on this matter, the considerations that moved the committee were the following: first, that the matter of real interest in the State Medical Society was the clinical meetings that are held before the State Medical meetings, such as were held here. It would be impossible to hold these meetings anywhere else than in Milwaukee. In the second place, the railroad facilities in Milwaukee are such that Milwaukee really, while it is in the southeastern part of the state, is more accessible to the whole state by night travel and by direct communication than any other city in the state, and the fact remains that the best medical meetings that the Wisconsin State Medical Society holds are those held in the city of Milwaukee, and we get a larger attendance here than we get anywhere else, even exclusive of the fact that there is a membership of practically 400 in the city of Milwaukee.

After all, the place of meeting is not so important as the sessions of the Association, and we feel that the best interests of the Medical Society are furthered by having the state meeting held in the city of Milwaukee. We get better attendance; we have better programs; it is easier to bring speakers to Milwaukee than to any of the other cities, and because of the fact that it is Milwaukee, the metropolis of the state, people come to Milwaukee, incidentally perhaps, to the state meetings to do something else, and it does not detract materially from our sessions.

The President: Dr. Sarles, have you any comment to make?

Dr. W. T. Sarles, Sparta: Mr. President and Gentlemen. Of course there are other matters to consider besides our own convenience regarding meeting places. So far as most of us are concerned, Milwaukee is the most convenient and best place for holding our annual meetings, but we must consider that other parts of the state must be visited with our annual sessions so that many who would not go to Milwaukee could be directly

interested and obtain membership by holding meetings in different sections of the state at least every other year. We find in our National organization that it would be most convenient to the largest number of members to hold our Annual Sessions, say at Chicago, the home office, but in order to obtain increased membership and increased interest in the Association we find it necessary to meet North, East, South and West different years. I think it would be a good thing to go to Kilbourn with our next meeting. I know that Kilbourn is especially good at taking care of a crowd and it will be in a part of the state where we never have met before.

You have got to have your whole state membership interested, and you can best do that by meeting at different sections different years, letting them know you are especially interested in them.

THE PRESIDENT: Dr. Lorenz, have you any comment?

DR. W. F. LORENZ, Mendota: No, sir.

THE PRESIDENT: Dr. Dearholt, have you anything to say?

DR. HOYT E. DEARHOLT, Milwaukee: No, Mr. President, except from what our experience has been in past years, I do not believe that there is any question but what Milwaukee is usually the best meeting place. I think that many physicians are not particularly inspired to go from one small community to another small community. There is no question but what the attractiveness of the city to doctors' wives may sometimes be a determining factor in bringing the doctors to the meetings. Their families are regulated like my own. I believe Milwaukee is the best place, even though as a Milwaukeean I would personally like very much to go somewhere else.

THE PRESIDENT: Dr. Jermain, have you any comment?

DR. L. F. JERMAIN, Milwaukee: No.

THE PRESIDENT: It there anyone else who desires to say anything on this matter?

DR. JOSEPH SMITH, Wausau: Mr. Chairman, I heard what was said in the report of the committee. As far as I am personally concerned I would rather come to Milwaukee than go to any other place, but I believe what Dr. Sarles has said has a considerable amount of truth in it. I do believe that at some time in the near future we ought to have a meeting in the northern part of the state. The representation at this meeting from the northern part of the state is rather small, and has been rather small, because for the last few years the meetings have been held in some place in the southern part of the state practically all the time. You remember some years ago we had a meeting at Wausau. We are not particularly blessed with hotel facilities or anything else, but we had a good meeting registration of about 400, and I think that is about as many as we get in Milwaukee in ordinary years. I think this is a matter well worth considering, and whether we go there this year or not, I believe it would be a mistake to adopt the policy of feeling that Milwaukee ought to have the meeting all the time. I think we ought to go some place else in the near future.

THE PRESIDENT: There seems to be some sentiment in favor of Kilbourn, and we would be very glad to have Kilbourn extend us an invitation some other year.

DR. W. F. ZIERATH, Sheboygan: Mr. Chairman, personally I should like to see the meeting held at Kilbourn; I do not think it is fair to be putting it off, they may not feel in the same mood next year. Speaking of these meetings in other cities, personally I have gotten just as much if not more out of the meetings that have been held at Wausau and Oshkosh and Madison, and the one at La Crosse, and so far as being an inducement to have doctors' families go with them, that trip to Kilbourn would be an ideal proposition, if they have so many hotels, and at that season of the year, the inducement to physicians to take their families over by auto would be quite a factor. That was one of the arguments that was made in favor of La Crosse. I think a great many of them took advantage of it. Personally I should be in favor of rescinding the action of the committee in selecting Milwaukee for the next meeting, and accepting the invitation from the city of Kilbourn. As a test of that, I will make a motion that we rescind the action of the committee which reported in favor of Milwaukee and substitute Kilbourn for Milwaukee, for the next place of meeting.

THE PRESIDENT: You have all heard Dr. Zierath's motion. Is there any discussion?

DR. S. S. HALL, Ripon: Is the motion seconded?

DR. H. A. ROBINSON, Kenosha: Mr. Chairman, after hearing Dr. Sarles talk, I believe in harmony, and I believe in keeping the members in good humor all over the state, if it is a possible thing to do. I was very much in favor, as the Doctor here said, of having the meeting in Milwaukee. Of course Milwaukee is very much more convenient for me, but I will forget all about convenience to myself if it is going to make a better feeling, and get out more members, or members from the different section of the state, and I think that I will second the Doctor's motion to have it reconsidered and put to a vote of the delegates here, and see whether or not they want to change. It has not gone so far but that it can be changed. It is simply a recommendation, and it remains for the main meeting, as I understand it, to elect the members we have suggested, or the people we have suggested for the officers, and for the meeting place; and I presume likely if we change our minds, *which we have a right to do*, and I really think possibly it would make a better feeling over the state if we did, and reconsider, and inasmuch as that seems to be the feeling, I will second the Doctor's motion and put it to a rising vote of the delegates of the assembly.

THE PRESIDENT: You have heard Dr. Zierath's motion? Is there any further discussion?

DR. H. E. DEARHOLT, Milwaukee: Mr. Chairman, I should like to offer this suggestion: This question has come up over and over again, and we have not really had any very good way of getting the sentiment of the general membership. Now I would suggest this possibility

that as Dr. Zierath has suggested before has been done in the past, to have this question referred for final decision to the Council, or at least to change the decision of the House, at its meeting in the middle of the year; and the other suggestion, to get a show of the sentiment of the members by the possibility of asking this morning at some well-attended session for a show of hands. I do not mean to delegate the authority of the House of delegates to the general meeting, but to get a show of sentiment, especially those who are outside of the city of Milwaukee, as to where they would like to have the meeting. It ought to be a very illuminating sign for not alone this House, but future houses of delegates in later years.

Dr. W. Zierath, Sheboygan: Mr. President, then I would modify that motion and suggest that the matter be left to the decision of the Council, that we follow Dr. Dearholt's suggestion, and the president be instructed to ask the general membership this morning, or some time during the day, how they feel about a meeting away from Milwaukee. It will give the Council a reflex of the sentiment of the general membership.

Dr. Sarles: I should like to ask Dr. Sleyster, if the Council does not have the right previous to a certain time, to change the place of meeting.

Secretary Sleyster: No.

Dr. Sarles: They do not have the same authority as the trustees have in changing the meeting place.

Secretary Sleyster: No, the House of Delegates decides it.

Dr. Otho Fielder, Sheboygan: Mr. Chairman, if this is a function of the House of Delegates, then it is a function of the House of Delegates, and I do not see any particular reason that the House of Delegates should delegate the matter to the Council. If we decide that Kilbourn should be the place of meeting, let us decide that. I have no personal interest in the matter at all. As a matter of fact, I think that I would like to go to Kilbourn personally, but I question whether we get, or whether we have, as good medical meetings in these other cities as we have in Milwaukee, and whether we would have as good a meeting in Kilbourn as we would have in Milwaukee. That is the real crux of the matter. We have had these other meetings, and had good times at Oshkosh, and La Crosse a year ago, and at Madison, and had a good meeting. Kilbourn is much smaller, and it would be an innovation in a way to go to Kilbourn. It might be all right. And, as I say, personally I would like to go to Kilbourn. But that is not the only consideration. It is possible that Kilbourn is a great deal farther from men in the northern part of the state than Milwaukee is. It is very probable—I don't know exactly what the railroad connections of Kilbourn are, but I think that would have been one of the things that the committee from Kilbourn should have presented to us, whether a man from Superior and Green Bay and Sheboygan and La Crosse and Madison and some other places could get to Kilbourn more readily than he could get to Milwaukee, because time is a factor with the medical man; he does not like to lose more time from home than he is obliged to. And it is a fact, as you all know, that a man can get onto a train in practically any place in this state, take a sleeper at night, and be here for the opening of the meeting next morning. Can you do that in Kilbourn? I doubt if you can. I think that is really a consideration. Then we have this matter of the clinical advantages, and the added interest that comes to a man in the country by going into a large city and seeing what is going on. I am perfectly willing though that there should be this motion with regard to this matter, and if the House of Delegates decide that it should be Kilbourn, all right.

Secretary Sleyster: Gentlemen, it is getting so late that Dr. McGarty thought it would be best to go in and get the general session started, and with your permission I will take his place.

Dr. R. D. Boynton, Kilbourn: Mr. Chairman, I am not a member of the House of Delegates, but I would like the floor in answer to Dr. Fiedler. There are two different phases that I would like to answer. One is the question of railroad facilities. We have the main line of the Chicago, Milwaukee & St. Paul Railroad. It is true that we have not quite as many railroads in our town as Milwaukee has, but if you would go out and hob-nob with the delegates who are here from all parts of the state you will find that the majority of them have come in their cars, and not on the train. If they are going to bring their families with them they are very much more apt to drive than they are to come on the train. But as far as direct connection with Milwaukee or Chicago is concerned, I do not know if you could find a much better train service than we have out of Kilbourn, because the St. Paul road appreciates the importance of handling tourists' travel, and the connections to Kilbourn are consequently an important factor with them, so they give us very good train service.

As far as the clinical end of the proposition is concerned, we know that—or I think the surgeons in the state here will bear me out in this, that the clinical end of the meeting coming up Monday and Tuesday of this week made it impossible for several of the members of the State Association to remain over for the general sessions. The men came in here and took in the clinical end of the program, and then left. Now I can cite several names of some of the best men in the state along surgical lines that were here just for that part of the program, they did not remain for the balance. But it is true, and I am going to be frank about this, we do not have the surgical phase to offer you, but as far as the clinical end and the other lines of work are concerned, the program which might be developed there would be similar to the La Crosse meeting, I think we could offer you equally as good clinics as they had at La Crosse, and I believe Dr. Pleyte of the Wisconsin Anti-Tuberculosis Society can tell you of the clinics in Columbia County along their particular line.

I know the expression of a good many of our members at La Crosse on the tuberculosis clinic, i. e. that the average practitioner got more out of that clinic than he

had out of any other phase of the La Crosse meeting, because it is the practical side of things that we are up against to-day, and that which the general practitioner wants to get information about, I believe, and we have an unlimited amount of that type of clinical material at Kilbourn.

Now might I suggest that the secretary, if you have time, read the invitation of the Kilbourn organization.

DR. SMITH: I object to that, because I think everybody here has heard it, and the time is getting short. I do not think it is really necessary to read it.

SECRETARY SLEYSTER: Are you ready for the question?

(Calls for the question).

SECRETARY SLEYSTER: The motion as amended by Dr. Zierath who introduced it, is that the matter be referred to the Council after determining the sentiment of the general membership. Dr. Robinson, will you accept the amendment?

DR. ROBINSON: Well, I don't know but I feel a good deal as one of the other doctors here said, I think we are relinquishing some of our rights when we do that. I think we have a right to settle it one way or the other. I was willing to take a vote among the delegates. I really do not like to second the motion.

SECRETARY SLEYSTER: In that case there is no motion before the House.

DR. ROBINSON: If someone else cares to second the Doctor's motion, all right.

DR. ZIERATH: Let the original motion go.

SECRETARY SLEYSTER: The original motion then is that we hold the meeting at Kilbourn. This motion has been seconded. Are you ready for that question?

(Calls for the question).

SECRETARY SLEYSTER: All those in favor will signify by saying "aye", contrary "no".

(Calls for a standing vote).

DR. JOSEPH SMITH, Wausau: I am not a delegate, but as a Councilor I should like to have the feeling, of course, of the general meeting, on this matter, before we decide it; whether it is decided by the House of Delegates or by the Council, I do not care, but I should really like to know what the men in the general meeting would say if the matter was put up to them. Milwaukee men have told me, a number of them, that they would rather go to some outside place than have the meeting in Milwaukee.

SECRETARY SLEYSTER: There will be a meeting of the House of Delegates tomorrow, and at that time it could be decided.

DR. L. F. JERMAIN, Milwaukee: I move that the matter be referred to the House of Delegates tomorrow morning, and definitely decided.

Motion seconded.

SECRETARY SLEYSTER: Will you withdraw your motion, Dr. Zierath?

DR. ZIERATH: I will withdraw the motion.

SECRETARY SLEYSTER: You will withdraw your second, Dr. Robinson?

DR. ROBINSON: Yes.

SECRETARY SLEYSTER: The motion is that the question be laid over until tomorrow morning, and in the meantime the sentiment of the general session be determined. All those in favor will signify by saying "aye", opposed "no".

Motion carried.

DR. G. WINDESHEIM, Kenosha: I should like to draw the attention of the House of Delegates to the fact that they have already adopted the report of the Nominating Committee in full. The report of the Nominating Committee says that we should meet in Milwaukee next year. Now in order to make any other motion valid you will have to reject the report of the Nominating Committee in so far as that clause is concerned—that is, first rescind the action of the House of Delegates on the report of the Nominating Committee, and reconsider that report.

SECRETARY SLEYSTER: I think this motion rescinded that Dr. Windesheim.

DR. G. WINDESHEIM, Kenosha: I think it would be well to leave it to a vote of the general session. Our constitution provides that any question that cannot be settled in the House of Delegates should be referred to a vote of the general session.

SECRETARY SLEYSTER: Does someone wish to make a motion that this be left to the vote of the general session?

DR. OTTO FIEDLER, Sheboygan: I move that we rescind the action on that part of the report of the Committee on Nominations which fixes the place of next year's meeting at Milwaukee, and that the matter be taken to the general assembly for a vote.

Motion seconded.

DR. JOSEPH SMITH, Wausau: I should like to amend Dr. Fiedler's motion by simply inserting the words "this morning" so that it will be at the general meeting this morning.

DR. FIEDLER: I accept that amendment.

Amendment seconded.

SECRETARY SLEYSTER: Are you ready for the question?

(Calls for the question.)

SECRETARY SLEYSTER: All those in favor will signify by saying "aye"; opposed, "no".

Motion carried.

SECRETARY SLEYSTER: I think that Dr. Jermain wanted to bring up the question of sectional meetings this morning.

DR. L. F. JERMAIN, Milwaukee: Mr. Chairman and Gentlemen: The other night a motion was carried in the House of Delegates, without any discussion whatever, relative to sectional meetings. In the first place, I do not think the action was a legal one, because I am quite certain that sectional meetings are provided for in the constitution and by-laws of the State Medical Society, and a different course would have to be pur-

sued to annul that provision. But what I am interested in mostly is that I did not like to see that sort of a motion passed by this House of Delegates without any discussion whatever. For my part, I think we ought not to do away entirely with the opportunity for doing sectional work in this Society. At a meeting like this, the 75th Anniversary, it is perfectly proper to have all general sessions, but there are times when special sessions, sectional meetings, are a distinct advantage. Personally, I have enjoyed the sectional meetings that we had in the last few years, very much, and I think I have really gotten more benefit out of the State Medical Society on account of the sectional meetings than in any other way. Take yesterday afternoon, for example. There was a splendid program, but I left that room two or three times because I could not understand a single word uttered by the speakers. Now what good is that to the general medical society? It is of course very inspiring to have a big audience for a speaker, but what does the profession get out of it? You pack 400 or 500 men in a room, I do not care what kind of a room it is, and it is impossible for any except those who are fortunate enough to get the front seats, to hear anything. And that is where the sectional meetings are of advantage. When we had our sectional meeting of the medical section in this little room here, the room was full, and everybody could understand every word, and everyone got in on the discussion, and all were deriving some benefit out of the meeting. Now there may be times when it is not wise to have sectional meetings. For instance, if you go up in the state in some small city, where you do not expect a large audience, you may want all general sessions; but when you have a meeting in Milwaukee, where you have perhaps 400 or 500 people crowded into the hall at one time, I think we ought to provide for sections, and I think that the sections ought to be limited; there ought not to be more than three sections at any time, the surgical section, medical section, and eye, ear, nose and throat section; I would much rather see it decided by the Council each year, whether the meetings are to be sectional meetings or not, or whether they are to be all general meetings. I think it is a mistake to decide at this time that we should never have any more sectional meetings.

Dr. W. F. Lorenz, Mendota: I was responsible for that motion to which Dr. Jermain refers. My thought was that the meetings, such as the one held at La Crosse last year, and other years at different places outside of Milwaukee, are of such a character that the sectional grouping is unsuccessful, because of inadequate attendance. Dr. Jermain referred to the session yesterday forenoon; had that been a sectional meeting it would have been less attended. If you had had another speaker in a section at the time that Dr. Rosenow appeared on the program, it would have meant that your section would not have been attended. Now that is not fair to those who appeared on the sectional program. It is a very embarrassing thing indeed, to find that your audience gets up and leaves and goes to another section. Naturally, they would be attracted by some outside speaker. I believe, however, that the suggestion made by Dr. Jermain is very good. However, instead of leaving it to the Council, why not leave it to the Program Committee, possibly to the president of the Society. The burden of providing the program falls upon their shoulders, and you all know it is no small task. It fell to my lot several years ago to try to arrange a program, and I had a very difficult job, nothing but refusals all around. I am perfectly willing, therefore, if such a motion is made, that it be left to the discretion of either the president-elect or the chairman of the Program Committee what type of program he wishes to offer, and then he can be guided according to the place where the meeting is held. Certainly in Milwaukee sectional meetings are probably the proper type of meeting to have, but not outside.

Dr. S. S. Hall, Ripon: Section 7 of the constitution says that the House of Delegates may provide for a division of the scientific work of the Society into appropriate sections, and for the organization of such district societies as will promote the best interests of the profession. That seems to be all there is in the constitution or by-laws with regard to the sections, and it is left entirely to the House of Delegates to provide for. They may do it at their discretion.

Dr. L. F. Jermain, Milwaukee: I want to say this, that I do not think it is wise at any time to have sectional meetings at the time you have general sessions. When there is a general session it should be held alone. For instance, you can have your general sessions in the afternoon, and have all the members of the medical profession attend those general sessions. At those general sessions have your addresses and a discussion of border line subjects of interest to everybody. The papers yesterday were certainly of interest to everyone. I do not believe you should divide up the Society to the extent that the general sessions are interfered with. Have your sectional sessions at a time when there are no general sessions. I heard many eye, ear, nose and throat men express themselves within the last day or so that they are very sorry that the sectional meetings have been discontinued this year. Of course it was all right this year, because of the anniversary meeting.

Dr. Hoyt E. Dearholt, Milwaukee: Mr. Chairman, this is a subject to which I have given a great deal of thought, because it was during my administration that the change was made. Dr. Jermain has spoken of the difficulty of hearing in a hall so large as to accommodate 500 people. I think that this ought not to be passed unchallenged. It is utterly impossible to hear in that hall over there with 200 people. Now we must bear in mind that the reason we are meeting in this place was because the Auditorium was the only place in the city of Milwaukee that would provide for a general auditorium and three or four small meeting rooms. If we went to a hall like St. John's Cathedral Hall, or the Public Museum Hall or Auditorium, or even to the Elk's Club, or any one of half a dozen other auditoriums that I can think of in Milwaukee, we would have no difficulty whatsoever in having a whole registration list here with perfect ease. But you cannot do it here.

There isn't a room outside of the big Auditorium in which 500 people can hear. But if we did not have to provide for sectional meetings there would be no necessity for meeting in this building. It is the noise of the streets out here that makes it impossible to hear, and not the impossibility of finding an auditorium in which 500 people can hear. I, on my side, have heard sentiments generally just the contrary to Dr. Jermain's, and more than one has spoken of how glad they are that the sectional meetings have been done away with, and the feeling that in a society of this sort perhaps what is needed most is for the surgeons to hear the medical papers, and the medical men to hear the surgical papers. I think the paper yesterday morning on goitre was an admirable illustration of the importance of having a question like that presented to a general session, where the several opinions come to a conclusion.

Dr. W. T. Sarles: Mr. Chairman and Gentlemen: Dr. Jermain is absolutely right. Twenty-two years ago, when I was President of the State Society, I made the statement in my Annual Address, that we should divide our work in sections. I am still convinced that this is the proper method of procedure. We can hold our general meetings at times which will not conflict with the section meeting. This plan is adopted by nearly all of our State Societies and of the American Medical Association. Our Constitution leaves the matter of Section work at each annual meeting to the Program Committee.

Dr. S. S. Hall, Ripon: Leaves it to the House of Delegates.

Dr. Sarles: That is what I mean, the ruling body. Why not leave it that way? Your motion does not amount to anything. We cannot interfere with the constitution and by-laws, unless we go contrary to the regular process. And what harm will be done to leave it in line with other bodies in other states, and with the national body? I can not see.

Dr. Otho Fielder, Sheboygan: It is left to the House of Delegates, and this is the House of Delegates, and we are the body to decide whether we shall have sectional programs, or one general program.

I agree with Dr. Jermain. I think Dr. Dearholt's illustration of the goitre question was not well taken, because that is one of the border line questions that should come in a general session. Likewise you can think of any number of other subjects that are border line subjects, that are of interest to both the medical men and the surgeons. There are some questions that are purely surgical questions, and other questions which are purely medical questions, and they ought to be discussed by men who are interested particularly in their respective branches.

Dr. Lorenz's objection was that if a particular subject or sectional meeting were in session at the time that Dr. Rosenow's paper was presented, that sectional meeting would have had no audience. True enough. There should have been no sectional meeting when Dr. Rosenow was speaking, and the Program Committee ought to take that matter into consideration. When these men come, say, from Chicago, or New York, or Rochester, or somewhere else, with a message, we should all be there to get it. But when we get together for conference and discussion and help in our everyday work, and to get some new ideas from one another, where we meet in conference, then we should be in sections. I think that Dr. Jermain's suggestion that we have the morning session a general session, and the afternoon session a special session, is right, or that some day shall be devoted to sectional meetings, and another day to general meetings, is all right. A man coming in for one day can then get both things. But I believe in the sectional meetings, and the lesser number will get more out of a paper than a greater number.

Dr. G. Windesheim, Kenosha: Mr. Chairman and Gentlemen: It seems to me that this discussion is somewhat futile. I think three or four years ago the House of Delegates decided that the State Medical Society should be divided into sections. The sections are established. They have held their meetings in years past, and why not just simply consider it that this Society has its sections, it has its section on eye, ear, nose and throat, its surgical section, its medical section and the section on public health. There are four sections besides the general meetings. Now I think it should be left altogether to the Program Committee to work up the program along that line, either separate sectional meetings, or else all the papers that are especially relative to one section read at a certain time at the general meeting, then those belonging to that section can be there, and those that want to hear something that they do not know much about, can be there. One forenoon, for instance, most of the papers could be on eye, ear, nose and throat work; another forenoon most of the papers on surgery; and another forenoon some papers on public health or on medicine, or something of that sort. The afternoons could be left for other questions of general interest. But there is no necessity for the House of Delegates to-day to act on that question, because that question has been settled. The Society has divided into sections already, by act of the House of Delegates.

Secretary Sleyster: Gentlemen, the action of the House of Delegates Tuesday night could only relate to next year's program, inasmuch as the constitution provides for sectional meetings in case the House wants them. As the matter stands, by the action taken Tuesday, sectional meetings will be dispensed with next year. Do you wish to let the matter stand that way, or do you wish to refer it to next year's Program Committee?

Dr. W. F. Lorenz: I move that we rescind the action of the other evening.

Dr. S. S. Hall, Ripon: I think it should be left to the Program Committee next year.

Dr. L. F. Jermain, Milwaukee: This will all depend now on where you have your meeting. If the meeting is left to Milwaukee, I would like to see sectional meetings.

Dr. Otho Fiedler, Sheboygan: If we rescind the action, that leaves it to the Program Committee.

Motion seconded.

The Secretary: It has been moved and seconded

that we rescind the action, leaving it to the Program Committee. All in favor will signify my saying "aye"; opposed, "no".

Motion carried.

DR. W. A. MUNN, Janesville: Mr. Chairman and Gentlemen: I have had something in mind that I think is a good thing to bring up before the House of Delegates, and that is, has the Wisconsin State Medical Society been doing what it should for its members. It seems to me that the general session which we are having every year is perfectly proper, but why not have an original or district session meeting in each councilor district? One of the members stated here just a little while ago that we were not active enough in the northern part of the state. If we had district meetings quarterly, and each councilor got his district out, I think we would create more interest among the medical profession. By having meetings in the different sections, we would have material to pick speakers from at different times of the year, and I think that we might be able to bring out our members at the general session.

SECRETARY SLEYSTER: For Dr. Munn's information I might say that the northern part of the state is the only district holding district meetings. They are doing splendid work. Is there any further discussion on the subject?

DR. W. F. LORENZ, Mendota: My work takes me about the state quite a little, and I am absolutely in accord with the views expressed by the former speaker. I think that the House of Delegates should go on record admonishing our Councilors to do everything possible to hold district meetings. Without doubt they are very successful. The Eau Claire district meeting is almost the equal of our annual meeting of the State Society. If we could help in any way by going on record to that effect, I would like to see it done.

SECRETARY SLEYSTER: Do you want to put that in the form of a motion, Dr. Lorenz?

DR. LORENZ: Yes, I would make that motion.

Motion seconded.

SECRETARY SLEYSTER: It has been moved and seconded that the Councilors be admonished to hold district meetings in their district, if possible, and make every effort to hold district meetings during the coming year.

DR. W. F. LORENZ, Mendota: I would like to add to that motion an amendment to the effect that the Councilor has the privilege of calling upon the Program Committee that is elected for the annual meeting, to assist in arranging for a program for his district meeting.

SECRETARY SLEYSTER: Gentlemen, you have all heard the motion. Is there any discussion?

(Calls for the question).

Motion put and carried.

SECRETARY SLEYSTER: Is there any further business to come before the meeting?

DR. W. F. ZIERATH, Sheboygan: I move that we adjourn.

Motion seconded.

Motion carried.

SECRETARY SLEYSTER: There will be a meeting of the House of Delegates to-morrow morning at 8:30 in this room.

HOUSE OF DELEGATES SESSION SEPT. 9, 1921,

8:30 a. m.

Meeting called to order by the President.

The minutes of the previous meeting were read and approved.

THE PRESIDENT: We shall have to take up the question of deciding where the next meeting will be held at this time.

DR. W. F. ZIERATH, Sheboygan: I move that the next meeting of the State Medical Society be held at Kilbourn, Wisconsin.

DR. J. F. MAUERMANN, Monroe: I second the motion.

THE PRESIDENT: Is there any discussion? You have all heard Dr. Zierath's motion.

DR. W. F. ZIERATH, Sheboygan: May I ask the secretary, along that line, if the time of the meeting is fixed by the Councilors.

SECRETARY SLEYSTER: It usually is, Dr. Zierath, and I think that would be advisable this summer for next year. The first thing we will have to determine will be of course the number of resorters at Kilbourn, and be sure that the hotels are not filled with summer resort people.

A MEMBER: Dr. Boynton told me that along that part of August and the first part of September the resorters had left, and they had 19 hotels, and there would be no possibility of not having enough room.

DR. S. S. HALL, Ripon: Did he say they had 24 hotels?

DR. W. F. ZIERATH, Sheboygan: Mr. Chairman and Gentlemen, speaking along this line, I should like to see the next meeting of the State Medical Society a great big family affair, and if the meeting is held just before school opens, it is possible for doctors to, and I think they will, bring their whole families down there, and we will have a great big family picnic.

DR. HALL: The resorters leave just in time to get the children to school; that is the time they leave all the resorts.

DR. W. F. ZIERATH, Sheboygan: It is still within the power of the Council to change the meeting, if it seems as though there was any effort to hold up the medical profession. I think the Council could take care of that.

SECRETARY SLEYSTER: I think, Mr. President, it might be well for this House of Delegates to go on record in that respect. Supposing they instruct the Council to get a guarantee of rates from the various hotels in Kilbourn, and that they be published.

THE PRESIDENT: Yes.

SECRETARY SLEYSTER: If it is decided that we are going to Kilbourn, it would not be unusual at all for

hotels to take advantage of things like that. The American Medical Association encountered that year after year.

Dr. Zierath: May I incorporate that in my motion?

Dr. Lettenberger, Milwaukee: I think that is a good point. I was up there. The officers arranged for hotel accommodations. They have 19 hotels, or what they call hotels. Unless they make that guaranty, I shall not go to Kilbourn. There has been a great deal of dissatisfaction, particularly in this part of the country; when men are up there, they are touring, and they are held up.

Dr. Lorenz: And no baths.

The President: At least 15 men spoke to me yesterday about it, and they were quite perturbed over the exorbitant prices; all of them had been there some time during the past two years, and said that the hotel group in Kilbourn was organized in such a way that rates were kept up beyond reason. A man by the name of Crandall dictates the policies of the hotel association, and he is the organizer.

I also spoke to this doctor about meeting halls. He was more in favor of the sectional meetings, because of the size of the halls. A moving picture house can be obtained which will hold about 300. That is the largest hall they have that would be serviceable; it would be necessary to have lanterns installed, they have none there that they could use at this time.

Dr. A. J. Gates, Tigerton: Personally I have no objection to going to any particular place, but just to elaborate on this Kilbourn offer; my wife and I were there just about a year ago, and spent about ten days, and we had one great time getting quarters, there were hardly any beds to be procured. The board is rather poor. We had to pay $8 a day for the first few days. We got out of there and got other quarters by the week, that is why we stayed; we paid a good price for that averaging about $6 a day and paying by the week. It might be arranged by the whole Society, I don't know. Kilbourn is a great sight-seeing place, but has no conveniences for a business meeting.

Dr. S. S. Hall, Ripon: I think, Mr. Chairman, that the best procedure would be to refer this matter to the Council, with the understanding that we will go to Kilbourn if satisfactory arrangements can be made with regard to rates and accommodations. Someone can go there, if necessary, and see what arrangements they have made, and what our accommodations are going to be, before the January meeting of the Council. I think it can be decided in a safe way by doing that. I had a talk with Dr. Boynton yesterday, and he assured me that he could arrange so that the rate would be good. If the accommodations are not such as he represented them to us I think we ought to throw it up. We do not want to go there handicapped by the want of proper accommodations and means of comfort while we are there. I have been there. I was there with my daughter a number of years ago and stayed 2 or 3 days, and we had a very comfortable boarding-house; but, as has been said here, what they call hotels, are simply people who take roomers and boarders and tourists, that is, they were at that time, that is a number of years ago; I do not know just what they have now. But someone can go there, some committee be appointed, or some person go there and see that proper arrangements are made.

The President: Do you want to incorporate that in your motion, Dr. Zierath?

Dr. W. F. Zierath, Sheboygan: Yes, that we go to Kilbourn, providing that the proper accommodations and reasonable prices can be assured us, and that it is thoroughly understood that the Council can negative the action of the House of Delegates in case they find that we cannot secure the proper accommodations at the proper prices.

The President: Is there any further discussion? Now is the time to talk about it.

Dr. J. F. Riordon, Berlin: I was at the Marshfield meeting of the state surgeons, and while there I got an idea of just how much work was required to make that meeting a success, that is, so far as accommodations were concerned. It was really an eye-opener to me how much actual work, work of a real hard nature was required to get the proper accommodations for all. I just wish to make this suggestion that one or two men alone cannot make proper arrangements. I believe it is too much of a job. If we have a meeting there we ought to have some district meeting of doctors, or have the Council arrange some method of providing accommodations, because it will require considerable work. And if there are not proper accommodations for all the members there, it leaves a bad impression.

Secretary Sleyster: Mr. President, the secretary of the Columbia County Medical Society, Dr. Schmeling of Columbus, is present and Kilbourn is in his county. I should like to hear from him.

Dr. A. F. Schmeling, Columbus: Mr. Chairman and Gentlemen. I am a member of the Columbia County Medical Society, and have been its secretary for a number of years. During the meeting of the House of Delegates yesterday morning, I voted against Kilbourn, honestly believing that Kilbourn had not the means nor the proper accommodations for a meeting of this Society. After the meeting of the House of Delegates, I had a talk with the Kilbourn representative and he assured me that Kilbourn was well able to give ample accommodations to the society. So when the whole society voted on the next meeting place I voted for Kilbourn, because of what the doctor had told me and because I am proud of the county in which I live.

Speaking from a medical standpoint, the Kilbourn profession has done but very little toward the progress of our County Society. Hardly ever has it attended the society's meetings, with the exception of Dr. Walter Jones who was a regular attendant during his short stay in Kilbourn. Our society has held two of its meetings in Kilbourn. At both times highly educating papers were read. At one time Dr. Frank Billings of Chicago, addressed the Society, and at another time Dr. L. F. Jermain, of Milwaukee. At both times the Kilbourn profession was not represented as it should have been.

This probably has made me a little prejudiced against Kilbourn. However, setting this aside, the interests of the whole society must be served first and I fail to see how the Kilbourn profession could make the proper arrangements for all functions connected with the meeting of this society. I am unable to vouch for proper and convenient hotel accommodations.

THE PRESIDENT: Are there any further suggestions?

DR. W. F. LORENZ, Mendota: In reference to the matter particularly of the experience recited by the former speaker, and the opinions expressed by the latter, and the experiences some of you have had who have made arrangements for meetings, how in the world will it be possible to have any committee of arrangements locally in Kilbourn to handle this meeting? It will mean that some outsider, or some outside group will have to go there and make all the arrangements for the meeting, do all the business, and deal with perfect strangers. Who is going to do that? Where are you going to go to get a committee that is going to go up to Kilbourn for a week or ten days beforehand, or even for a few days beforehand, and make the necessary arrangements for the meeting? I do not know where you are going to get the physicians to do that. You are not going to get them locally, that seems perfectly evident from what has just been said. I think that is a very serious matter.

THE PRESIDENT: I think we should discuss this now, we have the time, and secure every man's opinion as to what is to be done, because if we were to go to Kilbourn and not be properly taken care of, it would be a bad thing for the State Medical Society.

DR. F. E. BUTLER, Menomonie: I spent last Monday and Tuesday at Kilbourn, and was obliged to stay at Mrs. Ringling's Hotel, 3 miles from Kilbourn, on account of the crowded condition of the hotels at the Dells. This hotel is a very nice modern, up-to-date two-story hotel with possibly 50 rooms. At Kilbourn, the Crandall and Finch are the principal hotels, apparently always crowded. There are a number of the hotels there widely scattered up and down the river. I am afraid accommodations would be inadequate. Then there is another hotel, which is possibly the third in importance, with rooms with bath, but they are old frame structures. I was looking for a party I was to meet there, and went in every hotel in Kilbourn, the 19 of them I am sure.

DR. W. F. LORENZ, Mendota: How long did it take you, Doctor, to make the rounds?

DR. BUTLER: Well, practically all my stay there I spent looking for the party.

DR. LORENZ: 3 or 4 miles apart.

DR. BUTLER: Of course there are a number of boarding houses and other hotels, but they are very widely scattered, up the river, on the Upper Dells, there are also three hotels on the Lower Dells, widely scattered. There is the Page Hotel, I forgot about. It is a very nice looking place from the water. I think if they are not crowded at the time of the year we go there, I think the average member going to the Dells would want to bring his family, and I am afraid myself that the accommodations would be inadequate. That is my own private opinion, take it for what it is worth.

DR. S. S. HALL, Ripon: If we are going to Kilbourn, we had better buy a circus tent.

DR. W. F. LORENZ, Mendota: I should like to put this question: what are we concerned about, the welfare of Kilbourn, or the welfare of our annual meeting? The latter certainly is our first consideration.

THE PRESIDENT: Absolutely.

DR. W. F. LORENZ, Mendota: We haven't any reason to even bother about the relative merits or claims of various towns and places around the state. Our concern is the welfare of the Society and its annual meeting. And in order to place some other city on record as willing and desirous of taking this meeting at any time, I will offer Madison, and guarantee that we can provide facilities to handle the meeting. Personally, however, I believe that Madison is not as desirable as Milwaukee.

DR. JOHN SCHNEIDER, Oshkosh: Mr. President and Gentlemen. I believe that when all the facts are presented to a body of men they usually can arrive at the proper solution of a question like this, and I think we did a wise thing yesterday in laying this thing over for 24 hours. I also feel that we should not "pass the buck" to the Councilors. This is a matter for the House of Delegates to decide, and I think with the facts presented as they have been this morning we can only do one thing, and that is, not to have the next meeting at Kilbourn, because I do not think the proposition looks good this morning. The way it was presented yesterday we did not have the facts as they really are, and 24 hours has given us a chance to work things out; we see it in a different light; and I think the wiser thing for the House of Delegates to do is to decide against Kilbourn, and have the next meeting in Milwaukee or Madison.

DR. W. F. ZIERATH, Sheboygan: Mr. Chairman, in making that motion to have Kilbourn declared the place of next meeting, I was not aware of those facts. My impression was that they had ample accommodations there and reasonable rates. If this is a scheme to boost the finances of the hotel-keepers of Kilbourn, I should be the one to oppose it very, very strongly.

DR. J. F. MAUERMANN, Monroe: Mr. President, since hearing the remarks by the physicians present, I will withdraw my second to the motion.

SECRETARY SLEYSTER: Mr. President, Dr. Boynton, I understand, is secretary of the Kilbourn Commercial Club. There are few Kilbourn physicians—I think there are only 2 or 3 men there.

DR. SCHMELING: There are 3 men.

THE PRESIDENT: But one is not regular.

DR. SCHMELING: There is one who belongs to the Society.

SECRETARY SLEYSTER: But one man belongs to the Society, Dr. Boynton.

DR. SCHMELING: Dr. Boynton I guess belongs still to Winnebago County.

THE SECRETARY: That is two men.

DR. SCHMELING: The other doctors do not belong to the Society at all.

SECRETARY SLEYSTER: That gives two men belonging to the Society, neither of them active, and one of them who presented the invitation to us, is the secretary of the Commercial Club, which is the Hotel Men's Association. I do not think we are under any obligations to go to Kilbourn. However, I do think we ought to take into consideration the very evident sentiment of the general session yesterday, that next year's meeting should go out into the state. I would suggest a motion be made that next year's session be held in Kilbourn or some other place outside of Milwaukee. If we should decide to go back to Milwaukee next year, we are going to be very severely criticised by the big group of men yesterday from out of the state who felt that the meeting should not come to Milwaukee.

DR. ZIERATH: It will be hard to explain that proposition to the general session without bringing the Hotel Association of Kilbourn into disrepute.

DR. E. H. SPIEGELBERG, Boscobel: These discussions we are having are not printed anyway—or are they? I think every member reading all the discussions will realize why there has been so much discussion, and why we are considering the matter, and if Dr. Zierath's motion is still in force, and it is permissible, I would like to amend that to the effect that if it is possible, we have the Council or some other representative body of the Society investigate conditions very thoroughly, either by a trip up to Kilbourn or some other method of determining, before the January meeting, as to just when or where the meeting could be held, and the House of Delegates instruct or suggest to the Council that we suggest that it be thoroughly investigated.

THE PRESIDENT: This was also mentioned to me by a few men, who asked me to mention it here, that the Hotel Association, of which Mr. Crandall is President, levies a tax. Every man who rides on the boat, through the Dells, is taxed 39 cents. I think it would be a good idea if Dr. Sleyster could go up there some time between now and January 1st, and report at that time to the House of Delegates or the Councilors, what he thinks of the proposition, and then to remember Dr. Lorenz's suggestion that if Kilbourn is not the place to hold the State meeting, to figure on Madison. I just mention this. Dr. Dearholt, have you any suggestions?

DR. H. E. DEARHOLT, Milwaukee: Mr. President, I feel, as I said yesterday, rather delicate about this matter. As a member of the Council, I do not like to suggest that this thing be left over to the Council, but it does seem to me that when this House of Delegates adjourns and there will be no intermediate body except the Council between now and next fall to decide the matter, and it is a long time away, and there may be any number of factors arising between now and that time, that some expression should be left either to the Council or to the Program Committee, or to some body, some organization, some committee, to provide the arrangements according to the exigencies that may arise between now and that time. We have had many situations of that sort in the past, and taking any other action is difficult. As I say, I feel delicate, as a member of the Council, about suggesting that any of the authority of this House of Delegates be delegated to anybody else. On the other hand, as I say, the experience of past years makes it seem to me unwise to take an action which cannot be changed according to the exigencies of whatever situation may arise.

THE PRESIDENT: Is there further discussion?

DR. LORENZ: Is there a motion before the House?

THE PRESIDENT: No.

DR. LORENZ: Mr. President, I move that the House of Delegates instruct the Council to select the next place for the annual meeting, and in the consideration of the next place of meeting that they have available for their deliberation the minutes of the House of Delegates.

DR. SPIEGELBERG: I second that motion.

THE PRESIDENT: You have all heard Dr. Lorenz's motion. Is there any discussion? If not, all those in favor of the motion will signify by saying "aye; opposed, "no".

Motion unanimously carried.

THE PRESIDENT: The motion is carried. Is there any new business? If not, a motion to adjourn is in order.

DR. LORENZ: This is the final meeting?

THE PRESIDENT: Yes, this is the last meeting until January.

Motion to adjourn made, seconded and carried.

(House of Delegates adjourned).

LIST OF MEMBERS OF THE STATE MEDICAL SOCIETY OF WISCONSIN, 1920

Abaly, W. C., Madison.
Abbott, Le Roy, Norwalk.
Abelman, T. C. H., Watertown.
Ackerly, A. W., Milwaukee.
Ackerman, Wm., Milwaukee.
Ackley, S. B., Oconomowoc.
Adamkiewicz, Jos. J., Milwaukee.
Adams, Geo. F., Kenosha.
Addleman, I. M., Wausau.
Ainsworth, H. H., Madison.
Albers, H. H., Allenton.
Aldridge, H. W., Manitowoc.
Alexander, Sara W., Hudson.
Alexander, W. S., Fond du Lac.
Allen, C. F., Middleton.
Allen, Jessie P., Beloit.
Allen, J. S., Norwalk.
Allen, L. L., Wauwatosa.
Allen, L. P., Oshkosh.
Allen, Wm. J., Beloit.
Altenhofen, A. R., Wauwatosa.
Altman, Maurice, Milwaukee.
Amundson, K. K., Cambridge.
Amunson, P. B., Mondovi.
Anderson, Harold B., Beloit.
Anderson, Jens, Racine.
Anderson, N. P., La Crosse.
Andrae, R. W., Plainfield.
Andre, F. E., Kenosha.
Andrew, C. H., Platteville.
Andrew, G. F., Prairie du Chien.
Andrews, C. W., Waupaca.
Andrews, M. P., Manitowoc.
Andrews, Neil, Jr., Oshkosh.
Andrus, Dell, Ashland.
Antoine, F. J., Prairie du Chien.
Aplin, F. W., Waukesha.
Appleton, E. G. Beaver Dam.
Armbruster, B. F., Milwaukee.
Armitage, J. E., La Crosse.
Armstrong, C. A., Prairie du Chien.
Armstrong, C. E., Oconto.
Armstrong, Guy, Pound.
Arnold, F. W., Milwaukee.
Arveson, R. G., Frederic.
Ashley, T. W., Kenosha.
Ashum, David W., Eau Claire.
Aus, J. L. N., Deer Park.
Austria, W. F., Merrill.
Avey, Sarah E., Milwaukee.
Axley, A. A., Washburn.
Axtell, E. E., Marinette.
Axtell, Luella E., Marinette.
Aylward, Richard C., Madison.
Baasen, J. M., Mt. Calvary.
Babcock, Frank, Cumberland.
Babcock, I. G., Cumberland.
Bach, J. A., Milwaukee.
Bach, Robert J., Milwaukee.
Bachhuber, A. E., Mayville.
Bachhuher, L. M., Mayville.
Baer, A. N., Milwaukee.
Baer, C. A., Milwaukee.
Bailey, M. A., Fennimore.
Bair, F. M., Cuba City.
Baird, John, Superior.
Baird, J. C., Eau Claire.
Baker, G. R., Tomahawk.
Baker, J. C., Hawkins.
Baker, J. H., Bryant.
Baker, W. F., Wausau.
Baldwin, F. H., Bloomington.
Baldwin, G. E., Green Lake.
Baldwin, L. H., Gillette.
Balkwill, C. A., Grafton.
Bancroft, H. V., Blue Mound.
Banfield, C. P., Mineral Point.
Banks, W. H., Yakima, Wash.
Bannen, W. E., La Crosse.
Barber, J. C., Marathon.
Bardeen, C. R., Madison.
Bardenwerper, H. E., Milwaukee.
Barnes, E. C., Rhon.
Barnes, H. T., Delafield.
Barnes, J. S., Milwaukee.
Barnette, J. R., Jr., Neenah.
Barnstein, Chas., Manitowoc.
Barnstein, J. E., Manitowoc.
Barrett, E. J., Sheboygan.
Barta, E. F., Milwaukee.
Barth, G. P., Milwaukee.
Bartran, W. H., Green Bay.
Batcheller, Gertrude, Madison.

*Deceased.
**Honorary.

Bath, Dane H., Oshkosh.
Batty, A. J., Portage.
Bauch, C. W., Milwaukee.
Bauer, K. T., West Bend.
Baum, E. L., Milwaukee.
Baumgart, C. H., Milwaukee.
Bayer, W. H., Merrill.
Bear, W. G., Monroe.
Beck, A. A., Coloma.
Becker, B. A., Silver Lake.
Becker, W. F., Milwaukee.
Beebe, C. D., Sparta.
Beebe, C. M., Sparta.
Beebe, C. S., Milwaukee.
Beebe, Geo., Eau Claire.
Beebe, L. W., Superior.
Beebe, P. A., Glenwood City.
Beebe, S. D., Sparta.
Beech, Geo. D., Adams.
Beffel, J. M., Milwaukee.
Begtrup, Oscar N., Viroqua.
Beier, A. L., Chippewa Falls.
Belitz, Alfred, Pepin.
Belitz, Wm., Cochrane.
Bell, A. R., Tomah.
Bellack, B. F., Columbus.
Bellin, Jos. J., Green Bay.
Bellin, Julius J., Green Bay.
Belting, G. W., Orfordville.
Bender, Jesse, Ithica.
Bennett, L. J., Ft. Atkinson.
Beunett, W. C., Denver, Colo.
Benson, G. H., Richland Center.
Bentley, J. E., Portage.
Bentzein, E. W., Milwaukee.
Berglund, S. A., Marinette.
Bergwall, R. P., Milwaukee.
Bernhard, A., Milwaukee.
Bertrand, Jos. H., De Forest.
Betz, J. C., Boscobel.
Beutler, W. F., Wauwatosa.
Beyer, H., Pittsville.
Bickel, E. F., Oshkosh.
Bill, B. J., Genoa Junction.
Bilstad, G. E., Cambridge.
Binnewies, F. C., Janesville.
Binnie, Helen A., Poynette.
Bird, H. R., Madison.
Bird, M. D., Marinette.
Birk, Benj. J., Milwaukee.
Black, N. M., Milwaukee.
Blackburn, F. E., Cassville.
Blair, J. C., Hazel Green.
Blanchard, C. W., Janesville.
Blankinship, R. C., Madison.
Blanton, Smiley, Madison.
Blekking, J. H., Elkhart Lake.
Blewett, M. T., Markesan.
Blom, Julius, Menomonie.
Blumenthal, R. W., Milwaukee.
Blumer, Edw., Monticello.
Bock, O. B., Sheboygan.
Bodden, A. M., Milwaukee.
Boeckman, F. A., Greenwood.
Boerner, R. W., Milwaukee.
Boger, T. A., Aurora, Ill.
Bolton, E. L., Appleton.
Booher, J. S., Richland Center.
Boorse, L., Milwaukee.
**Boothby, E. L., Hammond.
Borchardt, A. C., New London.
Boren, C. H., Marinette.
Boren, J. W., Marinette.
Bornstein, Max, Milwaukee.
Boslough, A. W., Wausau.
Bossard, C., Richfield.
Bossard, M., Spring Green.
Bowen, E. W., Watertown.
Bowen, H. P., Watertown.
Bower, Richard L., Madison.
Boyce, S. R., Madison.
Boyd, C. D., Kaukauna.
Boyd, G. T., Fond du Lac.
Boyer, E. R., Rhinelander.
Boynton, R. D., Kilbourn.
Bradbury, E. L., Neillsville.
Bradfield, J. A. L., La Crosse.
Bradford, E. B., Hudson.
**Bradley, H. C., Madison.
Brady, D. L., Bloomington.
Brah, A. J., Milwaukee.
Braun, Otto, Ashland.
Braun, Robt. F., Milwaukee.
Brazeau, G. N., Milwaukee.
Breckenridge, H. E., Racine.
Breed, A. L., Elmwood.
Breeden, R. F., Richland Center.
Brehm, H. J., Racine.
Brehm, Theodore, Racine.
Brewer, J. C., Jefferson.
Brey, P. F., Milwaukee.
Briggs, S. J., Madison.
Brindley, Roy, Boscobel.
Brinkerhoff, F. E., Beloit.
Brockway, Frank, Oshkosh.
Broghammer, T. J., Superior.
**Bromley, Fred W., Whitewater.
Brook, J. J., Milwaukee.
Brooks, E. H., Appleton.
Brown, A. D., Mineral Point.
Brown, E. B., Beloit.
Brown, F. E., Milwaukee.
Brown, G. V. I., Milwaukee.
Brown, H. M., Milwaukee.
Brown, I. M., New London.
Brown, J. F., Waupun.
Brown, R. C., Milwaukee.
Brown, S. V. I., Milwaukee.
Brueckbauer, H. G., Sheboygan.
Brumbaugh, E. V., Milwaukee.
Brunckhorst, F. O., Hortonville.
Brunkhorst, R. O., Milwaukee.
Bryant, J. R., Wausau.
Buchanan, R. C., Green Bay.
Buck, G. C., Platteville.
Buckley, T. J., Briggsville.
Buckley, W. E., Red Granite.
Buckmaster, S. B., Janesville.
Buckner, H. M., Mt. Horeb.
Bugher, C. E., Ladysmith.
Bunch, M. M., Milwaukee.
Bunting, C. H., Madison.
Burbach, T. H., Milwaukee.
Burdon, R. M., Green Bay.
Burger, H. E., Beloit.
Burkhart, E. W., Menomonee Falls.
Burns, Robt. E., Madison.
Burton, J. J., Milwaukee.
Busse, A. A., Jefferson.
Bussewitz, M. A., Milwaukee.
Butler, E. F., Mosinee.
Butler, F. E., Menomonie.

Cady, M. P., Birnamwood.
Caffrey, A. J., Milwaukee.
Cahana, Stephen, Milwaukee.
Cahoon, Roger, Baraboo.
Cairns, Rolla, River Falls.
Caldwell, H. C., St. Croix Falls.
Caldwell, Margaret, Waukesha.
Caldwell, T. J., Ladysmith.
Calkins, H. J., Shawano.
Callahan, J. L., La Crosse.
Calvey, P. J., Fond du Lac.
Camphell, L. A., Clear Lake.
Camphell, W. B., Waukesha.
Canavan, J. P., Winneconne.
Cantwell, W. H., Shawano.
Caples, B. M., Waukesha.
Cargill, N. W., Milwaukee.
Carhart, G. A., Milwaukee.
Carlson, E. S., La Crosse.
Carmichael, C. S., Helenville.
Carter, H. M., Madison.
Carter, R. M., Green Bay.
Carthaus, A. H. C., Thiensville.
Cary, E. C., Reedsville.
Casey, Merle, Almond.
Cassels, G. S., Pt. Washington.
Caswell, H. O., Ft. Atkinson.
Caughey, C. R., Kenosha.
Cavanaugh, T. E., Milwaukee.
Caveney, J. J., Milwaukee.
Chandler, F. E., Waupaca.
Chandler, Jos., Pardeeville.
Chaney, Eugene, Winnetka, Ill.
Chapman, F. M., Milwaukee
Chapman, V. A., Milwaukee.
Charbonneau, E., Superior.
Charron, T. A., Rice Lake.
**Chase, Samuel, Madison.
*Chilson, Benj., Beloit.
Chloupek, C. J., Green Bay.
Chorlog, J. K., Madison.
Christensen, Emil, Two Rivers.
Christensen, F. C., Racine.
Christenson, J. W., Westby.
Christiansen, Geo., Galesville.
Christofferson, A. L., Kenosha.
Christofferson, A. M., Waupaca.
Christofferson, H. H., Colby.
Christofferson, P. J., Waupaca.
Churchill, B. P., Milwaukee.
Clark, Burton, Oshkosh.
Clark, F. T., Waupun.

Clark, Kate, Cable.
Clark, L. F., Ladysmith.
Clark, M. H., Ripon.
**Clark, Paul F., Madison.
Clark, R. B., Monroe.
Clark, W. T., Janesville.
Clarke, C. P., Janesville.
Clawson, H. E., Red Granite.
Cleary, B. L., Edgerton.
Cleary, J. H., Kenosha.
Clement, W. J., Berlin.
Clifford, P. M., Green Bay.
Coerper, E. E., Fredonia.
Coffey, C. J., Milwaukee.
Coldren, C. M., La Crosse.
Coleman, H. M., Barron.
Collins, D. B., Madison.
Collins, W. P., Racine.
Colucci, M. J. J., Madison.
Combacker, H. E., Osceola.
Combacker, L. C., Osceola.
Combs, C. J., Oshkosh.
Comee, William, Green Bay.
*Conkey, C. D., Los Angeles, Calif.
Conklin, G. H., Superior.
Conley, J. M., Oshkosh.
Connell, D. R., Beloit.
Connell, F. G., Oshkosh.
Connors, J. H., Chippewa Falls.
Conroy, J. M., Nopeming, Minn.
Cook, E. H., Watertown.
Cook, F. S., Eau Claire.
Cooksey, R. T., Madison.
Coon, G. E., Milton Jct.
Coon, J. W., Steveus Point.
Cooney, E. W., Appleton.
Cooper, C. A., Colfax.
Cooper, E. S., Almond.
Copeland, E., Milwaukee.
Copps, L. A., Marshfield.
Corbett, J. F., Long Beach, Cal.
Corbett, M. E., Oshkosh.
Corcoran, C. J., Milwaukee.
Cornwall, W. B., Amery.
Corr, J. T., Racine.
Costello, A. E., Spooner.
Couch, E. E., West Allis.
Coumbe, W. R., Richland Center.
Cowan, Wayne F., Stevens Point.
Cowles, Robt. L., Green Bay.
Cox, J. A., Wautoma.
Cox, L. M., Milwaukee.
Craite, E. J., Rice Lake.
Cremer, C. H., Cashton.
Crikelair, F. L., Green Bay.
Cristman, E. S., Almena.
Crocket, W. W., Beloit.
Crommett, H. B., Amery.
Cron, C. O., Camp Douglas.
Crone, V. D., Beloit.
Crosby, E. P., Stevens Point.
Crosley, Geo. E., Milton.
Crowe, N. F., Delavan.
Crowell, Dean P., La Crosse.
Cummings, J. H., Superior.
Cunningham, J. N., Stanley.
Cunningham, M. A., Janesville.
Cunningham, R. B., Cadott.
Cunningham, Wilson, Platteville.
Curl, Howard, Madison.
Curless, G. W., Walworth.
*Currens, J. R., Two Rivers.
Currer, P. M., Milwaukee.
Curtin, A. L., Milwaukee.
Curtin, J. J., West DePere.
Curtis, G. E., Eau Claire.
Curtiss, F. D., Kenosha.
Cutler, J. S., Wauwatosa.
Cutter, J. D., Tomahawk.

Dailey, P. J., Elcho.
*Dake, A. J., Viola.
Dallwig, E. L., Milwaukee.
Dallwig, H. C., Milwaukee.
Daly, F. P., Reedsburg.
Dana, A. C., Fond du Lac.
Danforth, Q. H., Omro.
Daniels, J. T., Jefferson.
Daniels, L. J., Milwaukee.
Daniels, W. N., Moslnee.
Darby, G. S., Brodhead.
Darling, Earl, Milwaukee.
Darling, F. E., Milwaukee.
Darling, W. G., Milwaukee.
Darling, W. H., Minneapolis, Minn.
Darling, W. S., Milwaukee.
Davelaar, G. W., Milwaukee.

*Deceased.
**Honorary.

Davies, R. E., Waukesha.
Davin, C. C., Kenosha.
Davis, Carl H., Milwaukee.
Davis, Elmer, Richland Center.
Davis, F. A., Madison.
Dawson, C. A., River Falls.
Dawson, D. L., Rice Lake.
Dean, James P., Madison.
Dean, Jos., Madison.
Dearholt, H. E., Milwaukee.
De Besch, J. A., Milwaukee.
Decker, C. O., Crandon.
Decker, H. J., Milwaukee.
DeCock, J. L., Augelica.
Deicher, H. F., Plymouth.
Delaney, H. O., Beloit.
Delap, R. H., Richland Center.
Del Marcelle, C. C., Neenah.
DeNeven, A. C., Wyocena.
Dennis, J. F., Waterloo.
De Nosaquo, Samuel, Milwaukee.
De Pierre, A., Milwaukee.
Derge, H. F., Eau Claire.
DeSwarte, L. T., Beloit.
De Tuncq, Geo., Wausau.
Devine, H. Fond du Lac.
DeVoe, C. A., Berlin.
Dewey, R. F., Los Angeles, Calif.
Dewire, M. V., Sharon.
Diamond, J. A., Frederick.
Dickenson, G. H., Milwaukee.
Differt, C. C., Milwaukee.
Dill, G. M., Prescott.
Dishmaker, D., Kewaunee.
Dodd, J. M., Ashland.
Dodge, C. H., Clinton.
Doege, K. H., Marshfield.
Doege, K. W., Marshfield.
Doern, W. G., Milwaukee.
Doerr, Aug., Milwaukee.
Dohearty, F. P., Appleton.
Dohearty, W. H., Peshtigo.
Domann, W. G., Menomonee Falls.
*Donaldson, G. F., Shiocton.
Donnell, J. E., Cuba City.
Donnelly, F. J., Monches.
Donohue, E. J., Antigo.
Donohue, M. J., Antigo.
Donohue, W. E., Manitowoc.
Doolittle, J. C., Lancaster.
Doolittle, S. W., Lancaster.
Dorpat, Louis, Rhinelander.
Dougherty, C. F., Richland Center.
Doughty, P. H., Juneau.
Douglas, F. A., La Crosse.
Downing, D. F., East Orange, N. J.
Doyle, J. H., Little Chute.
Doyle, J. N., Schofield.
Drake, F. I., Mendota.
Drexel, A., Milwaukee.
Dreyer, R. A., Wheeler.
Driessel, H., Kewaskum.
Driessel, S. J., Barton.
*Drill, A. A., Milwaukee.
Drissen, W. H., Pt. Washington.
Duclos, A. A., Kilbourn.
Duer, G. R., Stoughton.
Dunn, E. A. A., Platteville.
Durr, W. E., Milwaukee.
Dwight, C. G., Madison.

Eagan, R. L., La Crosse.
Eames, H. F., Egg Harbor.
Eastman, J. R., Chicago, Ill.
Echols, C. M., Milwaukee.
Eck, G. E., Lake Mills.
Eddeu, R. W., Janesville.
Edwards, A. C., Reedsburg.
Edwards, W. A., La Crosse.
Egan, G. J., La Crosse.
Egan, W. J., Milwaukee.
Egland, G. R., Sturgeon Bay.
Egloff, L. W., Pewaukee.
Ehmer, J. W., Lomira.
Eickelberg, F. A., Reesville.
Eichelberger, W. W., Rockford, Ill.
Eidam, L. W., La Crosse.
Eisenberg, J. J., Milwaukee.
Eisenberg, P. J., Milwaukee.
Ekblad, V. E., Superior.
Elfers, J. C., Sheboygan.
Ellenson, E. P., Chippewa Falls.
Elliott, E. S., Fox Lake.
Elliott, J. T., Rhinelander.
Elliott, R. S., Green Bay.
Ellis, W. E., White Lake.
Elmergreen, R., Milwaukee.
Elsom, J. C., Madison.
Elvis, E. B., Medford.
Engsberg, W. A., Lake Mills.

Ennis S. A. J., Shullsburg.
Epley, O. H., New Richmond.
Erdman, C. H., Stanley.
Erickson, H. C., Stanley.
Ernst, G. R., Milwaukee.
Evans, C. A., Milwaukee.
Evans, Edw., La Crosse.
Evans, E. P., Milwaukee.
Evans, J. S., Madison.
Evans, Owen, Baugor.
Eyster, J. A. E., Madison.

Faber, C. A., Milwaukee.
Fahr, Geo. F., Minneapolis, Minn.
Fairchild, R. J., Embarrass.
Fairfield, W. E., Green Bay.
Falk, V. S., Stoughton.
Farnsworth, A. L., Baraboo.
Farnsworth, F. B., Janesville.
Farr, J. F., Eau Claire.
Farrell, A. M., Two Rivers.
Fauerbach, Louis, Madison.
Faulds, R. C., Abrams.
Fazen, L. E., Racine.
Fechter, F. J., Elkhart Lake.
Federman, E. H., Chicago, Ill.
Federspiel, M. M., Milwaukee.
Fellman, G. H., Milwaukee.
Felter, Edw., Plymouth.
Fenelon, C. D., Phillips.
Festerling, E. G., Reedsville.
*Fickes, H. C., Owen.
Fidler, C. A., Milwaukee.
Fiebiger, G. J., Waterloo.
Fiedler, O. A., Sheboygan.
*Field, F. T., Elroy.
Fifield, G. W., Janesville.
Finney, W. H., Clintonville.
Fisher, R. F., Wausau.
Fitzgerald, J. J., Eagle.
Fitzgerald, R. E., Milwaukee.
Fitzgibbon, W., Milwaukee.
Fitzpatrick, Mary L., Milwaukee.
Flanagan, G. J., Kaukauna.
Flatley, M. A., Antigo.
Fleek, J. L., Brodhead.
Fleming, E. E., Wausau.
Fletcher, E. A., Milwaukee.
Fletcher, Wm., Salem.
Fleury, F. D., Omro.
Flynn, L. H., Eau Claire.
Flynn, R. E., La Crosse.
Foat, J. S., Ripon.
Foerster, H. R., Milwaukee.
Foerster, O. H., Milwaukee.
Fogo, H. M., Janesville.
Foley, F. P., Dorchester.
Folsom, W. H., Fond du Lac.
Ford, W. B., Milwaukee.
Forkin, G. E., Menasha.
Fortier, C. A. H., Milwaukee.
Fortner, W. H., Princeton.
Fosse, B. O., Beloit.
Foster, J. H. A., Cornell.
Fowle, F. F., Wauwatosa.
Fowle, I. H., Milwaukee.
Fowler, J. H., Lancaster.
Fox, Paul A., Beloit.
Fox, Phillip, Sr., Madison.
Fox, Phil. A., Milwaukee.
Fox, Phillip R., Jr., Madison.
Fox, W. E., Milwaukee.
Francois, S. J., New Glarus.
Frank, J. H., Neillsville.
Frank, J. H., Milwaukee.
Franklin, I., Milwaukee.
Franklin, S. N., Milwaukee.
Franzel, J. E., Ft. Atkinson.
Frawley, R. M., Wausau.
Frawley, W. J., Appleton.
Freeman, Jos., Wausau.
Freudenberg, J. A., Markesan
Frew, J. W., Milwaukee.
Frey, F. H., Wausau.
Frey, P. G., Milwaukee.
Frick, Lewis, Athens.
Friedrich, R. O., Milwaukee.
Friend, L. J., Merrill.
Froggatt, W. F. L., Cross Plains.
Fucik, E. J., Williams Bay.
Fuldner, Louis, Milwaukee.
Fuller, M. H., Green Bay.
Fulton, H. A., Eau Claire.
Fulton, W. A., Burlington.

Gaenslen, F. J., Milwaukee.
Gallagher, E. E., La Crosse.
Gallogly, M. J., Milwaukee.
Galloway, A. D., Clayton.
Ganser, W. J., Madison.
Garrett, Sarah L., La Crosse.

Gates, A. J., Tigerton.
Gathman, Henry, Milwaukee.
Gaudette, D. J., Wauwatosa.
Gault, J. A., Lancaster.
Gavin, S. E., Fond du Lac.
Gendron, A. E., River Falls.
Genter, A. E., Sheboygan.
Gephart, C. H., Kenosha.
Gerend, A., Milladore.
Geyer, C. W., Milwaukee.
Giesen, C. W., Superior.
Gifford, H. B., Juda.
Gilbert, H. A., Madison.
Gilchrist, R. T., Milwaukee.
Gilles, A. S., Winnebago.
Gillespie, W. W., Milwaukee.
Gillette, H. E., Pardeeville.
Gillis, J. P., Polar.
Glasier, M. B., Bloomington.
Gleason, C. M., Manitowoc.
Guagi, W. B., Monroe.
Gohar, F. W., Milwaukee.
Gobar, G. G., Muscoda.
Goddard, J. B., Eau Claire.
Godfrey, Jos., Lancaster.
Godfrey, Rush, Lancaster.
Goetsch, O. F., Hustisford.
Goggins, J. W., Chilton.
Goggins, R. J., Oconto Falls.
Golley, F. B., Milwaukee.
Goodfellow, J. R., Superior.
Goodsitt, A. H., Milwaukee.
Gordon, J. B., Shawano.
Gordon, J. S., Milwaukee.
Gorst, Chas., Madison.
Gosin, F. J., Green Bay.
Gramling, E. H., Milwaukee.
Gramling, H. J., Milwaukee.
Gramling, J. J., Milwaukee.
Graner, L. H., Coleman.
Grannis, I. V., Menomonie.
Gratiot, C. C., Shullsburg.
Gratiot, W. M., Mineral Point.
Graves, L. S., Wilton.
Gray, A. W., Milwaukee.
Gray, R. H., La Crosse.
Gray, W. K., Milwaukee.
Greeley, H. P., Madison.
Green, M. K., Mendota.
Green, W. A., Wausau.
Greenberg, H., Milwaukee.
Greenwood, S. D., Neenah.
Gregory, A. T., Mauston.
Gregory, D. H., West DePere.
Gregory, Frank, Valders.
Gregory, W. W., Stevens Point.
Grinde, G. A., Cumberland.
Griswold, C. M., Clintonville.
Griswold, F. L., Mazomanie.
Griswold, G. W., Alma Center.
Groh, A. R. P., Milwaukee.
Grosskopf, E. C., Milwaukee.
Grotjan, W. F., Milwaukee.
Ground, W. E., Superior.
Grove, W. E., Milwaukee.
Gudex, V. A., Milwaukee.
Guilfoyle, J. P., Evansville.
Gunderson, A., La Crosse.
Gunderson, C. A. S., Deerfield.
Gunderson, G., La Crosse.
Gunther, Emil, Sheboygan.
Gunther, Otto, Sheboygan.
Gunther, T. J., Sheboygan.
Gunther, Wm. H., Sheboygan.
Gutsch, O. J., Sheboygan.
Guttman, Paul, Cato.
Guy, J. E., Milwaukee.
Guyton, E. A., Eau Claire.

Hahhegger, C. J., Watertown.
Hackett, J. H., Milwaukee.
Hadley, D. A., Oconomowoc.
Hageman, F. H., Milwaukee.
Hager, T. A., Dodgeville.
Hake, C. B., Milwaukee.
Hall, H. H., Webster.
Hall, S. S., Ripon.
Halsey, R. C., Lake Geneva.
Halsey, W. H., Milwaukee.
Hambley, T. J., Hurley.
Hamilton, D. B., Dodgeville.
Hammond, A. W., Beaver Dam.
Hammond, F. W., Manitowoc.
Haney, F. C., Watertown.
Hanko, Mary E., Plain.
Hankwitz, P. G., Milwaukee.
Hanley, W. J., Kenosha.

*Deceased.
**Honorary.

Hansen, John, Glenbeulah.
Hanson, J. W., Milwaukee.
Hanson, W. C., Racine.
Hardgrove, J. H., Eden.
Hardy, C. F., Milwaukee.
Hargarten, L. J., Milwaukee.
Harkins, J. P., Forest Junction.
Harlow, G. A., Milwaukee.
Harper, C. A., Madison.
Harper, Carl S., Madison.
Harrington, T. L., Milwaukee.
Harris, L. M., Superior.
Harter, A. F., Marathon.
Hartman, R. C., Janesville.
Harvey, J. R., Footville.
Harvie, W. D., Fond du Lac.
Hastings, J. F., Kenosha.
Haubrick, H. J., Oshkosh.
Hausberry, J. S., Wonewoc.
Hausberry, P. H., Hillsboro.
Haushalter, H. P., Milwaukee.
Hausmann, N. E., Kewaskum.
Haven, W. S., Racine.
Havens, Fred Z., Waupun.
Hayes, D. J., Milwaukee.
Hayes, E. P., Eau Claire.
Hayes, E. S., Eau Claire.
Haymau, C. S., Boscobel.
Hayman, L. H., Pasadena, Cal.
Hayward, J. C., Marshfield.
Head, L. R., Madison.
Hecker, Wm., Beloit.
Hedges, A. N., Ridgeway.
Heeb, Harry J., Milwaukee.
Heffron, J. J., Milwaukee.
Hefty, C. A., New Glarus.
Hegner, G. T., Appleton.
Heiden, H., Sheboygan.
Heidner, A. H., West Bend.
Heising, A. F., Menomonie.
Heldt, T. J., Waukesha.
Helgeson, E. J., Evansville.
Helm, A. C., Columbus, Ohio.
*Helm, E. C., Beloit.
Helm, H. M., Beloit.
Helz, J. W., Fond du Lac.
Hemmingsen, T. C., Racine.
Henderson, M. L., Milwaukee.
Hendrickson, H., Green Bay.
Henes, Edw., Jr., Milwaukee.
Henke, W. A., La Crosse.
Henken, J. F., Racine.
Henney, C. W., Portage.
Henrichsen, J. A., Larsen.
Heraty, J. A., Milwaukee.
Heraty, J. E., La Crosse.
Herbert, R. H., La Crosse.
Hernandez, J. A., Fall Creek.
Herner, W. L., Milwaukee.
Herrick, Edw. L., Kenosha.
Herron, A. L., Milwaukee.
Hertzman, C. O., Ashland.
Hess, C. F., Madison.
Hess, J. W., Adell.
Hicks, C. J., Jr., Mondovi.
Hicks, L. W., Burlington.
Hidershide, G. N., Arcadia.
Higgins, E. G., Melrose.
Higgins, S. G., Milwaukee.
Hildebrand, G. J., Sheboygan.
Hilger, W. F., Milwaukee.
Hinckley, H. G., Merrill.
Hines, L. L., Rockbridge.
*Hinn, L. P., Fond du Lac.
Hipke, G. A., Milwaukee.
Hipke, Wm., Marshfield.
Hirschboeck, J. G., Forestville.
Hitz, H. B., Milwaukee.
Hodges, F. L., Monroe.
Hodgson, A. J., Waukesha.
Hoermann, B. A., Milwaukee.
Hoermann, R. B., Milwaukee.
Hoffman, E. E., Sharon.
Hoffman, Geo. H., Milwaukee.
Hoffman, J. G., Hartford.
Hoffman, Leo, Camphellsport.
Hoffman, P. A., Campbellsport.
Hoffmier, L. A., Superior.
Hogan, J. H., Racine.
Hogan, J. M., Oshkosh.
Hogue, G. I., Milwaukee.
Holbrook, A. T., Milwaukee.
Holding,, A. F., Rockford, Ill.
Hollenbeck, N. W., Milwaukee.
Holliday, Marion, Oshkosh.
Holm, J. H., Kenosha.
Holmes, B. H., Racine.
Holtz, H. M., Beaver Dam.
Holz, A. P., Seymour.
Hopkins, Minnie, Ocouto.

Hopkinson, D., Milwaukee.
Horsewell, U. M., Wausaukee.
Hosmer, M. S., Ashland.
Houck, Mary P., La Crosse.
Hougen, Ed., Grand Rapids.
Hough, A. G., Madison.
Hovde, A. G., Superior.
Howell, E. C., Fennimore.
Howison, N. L., Menomonie.
Hoyer, A. A., Randolph.
Hoyer, G. C., Milwaukee.
Hoyme, G., Eau Claire.
Hoyt, G. E., Menomonee Falls.
Hubenthal, J. C., Belmont.
Hudek, D. F., Princeton.
Huennekens, Jos. H., Milwaukee.
Huff, F. C., Sturgeon Bay.
Hughes, J. R., Dodgeville.
Hugo, D. G., Oshkosh.
Hull, E. S., Milton Jct.
Hume, W. W., Milwaukee.
Hummel, W. J., Ablemans.
Hunt, E. M., Weyauwega.
Hunt, F. O., Fall River.
Hunt, Ida M., Weyauwega.
Hurd, H. H., Chippewa Falls.
Hurth, O. J., Cedarburg.
Hyslop, F. R., Janesville.

Ingersoll, R. S., Madison.
Irvine, W., Manawa.
Irwin, H. J., Baraboo.
Isou, G. W., Crandon.
Iverson, M., Stoughton.

Jackey, F. D., Thorp.
Jackson, Edw., Milwaukee.
Jackson, F. A., Eldorado.
Jackson, J. A., Mosinee.
Jackson, J. A., Jr., Madison.
Jackson, R. H., Madison.
Jacobs, E. C., Durand.
Jacobs, S. A., Milwaukee.
James, A. W., Muscoda.
Jamieson, Geo., Lone Rock.
Jamieson, R. D., La Crosse.
Jardine, E. W., Alma.
Jeffers, Dean, West Salem.
Jefferson, H. A., Clintonville.
Jegi, H. A., Galesville.
Jenner, A. G., Milwaukee.
Jensen, A. B., Menasha.
Jermain, H. F., Milwaukee.
Jermain, L. F., Milwaukee.
Jewell, T. M., Mindoro.
Johse, W. P., Milwaukee.
Johnson, A. T., Sauk City.
Johnson, A. W., Milwaukee.
Johnson, F. G., Iron River.
Johnson, Fred, Eau Claire.
Johnson, H. B., Tomah.
Johnson, H. C., Bruce.
Johnson, J. C., Ogdensburg.
Johnson, J. E., Holmen.
Johnson, Laura M., St. Peter, Minn.
Johnson, W. L., Janesville.
Johnston, G. B., Abbottsford.
Johnston, H. E., Oshkosh.
Johnston, W. M., Johnson Creek.
Johnstone, W. W., Racine.
Jones, A. N., Reedsburg.
Jones, A. W., Randolph.
Jones, David T., Wausau.
Jones, E. H., Weyauwega.
Jones, J. C., Milwaukee.
Jones, M. L., Wausau.
Jones, R. W., Wausau.
Jones, Susan, Racine.
Jones, W. J., La Crosse.
Jorgensen, P. P. M., Kenosha.
Judge, T. A., Milwaukee.
Juergens, L. W., Milwaukee.
Junck, J. A., Sheboygan.

Kahn, Jos., Milwaukee.
Kappelmann, F. W., Milwaukee.
Karnopp, G. L., Madison.
Karsten, A. C., Horicon.
Kastner, A. L., Milwaukee.
Katz, H. M., Cedarburg.
Kaumheimer, G. J., Milwaukee.
Kay, H. M., Madison.
Kaysen, Ralph, Milwaukee.
Kearns, W. M., Milwaukee.
Keech, J. S., Racine.
Keenan, Harry, Stoughton.
Keenan, T. P., Lake Geneva.
Keithley, J. A., Palmyra.
Keithley, J. W., Beloit.
Keland, G. A., Madison.

Kelaud, H. B., Racine.
Keller, J. M., St. Louis, Mo.
Keller, S. C., Sauk City.
Kellner, V. V., Maribel.
Kelley, F. H., Merrill.
Kellog, E. W., Milwaukee.
Kellogg, J. R., Portage.
Kelly, D. M., Baraboo.
Kelly, E. J., Milwaukee.
Kelly, John, Cato.
Kelly, W. W., Green Bay.
Kemper, W. G., Manitowoc.
Kenney, C. J., Milwaukee.
Kenney, G. F., Milwaukee.
Kersten, N. M., De Pere.
Kettelhut, E. J., Milwaukee.
Keyes, T. B., Chicago, Ill.
Kiefer, J. G., Milwaukee.
**King, C. F., Hudson.
*King, G. F., Green Bay.
King, Jos. M., Milwaukee.
King, Mollie, Eau Claire.
Klugs, J. S., Watertown.
Kinne, E., Elkhorn.
Kispert, R. M., Green Bay.
Kissinger, C. A., Melrose.
Kissling, A. C., Milwaukee.
Kitzke, F. W., Milwaukee.
Klein, J. T., Milwaukee.
Kleinboehl, J. W., Milwaukee.
Kleinhans, F. A., Milwaukee.
Kleinhans, M. A., Milwaukee.
Kleinschmidt, H. W., Oshkosh.
Kliese, L. A., Milwaukee.
Knapp, E. J., Rice Lake.
Knauf, A. J., Sheboygan.
Knauf, F. P., Kiel.
Knauf, G. E., Sheboygan.
Knauf, N. J., Chilton.
Knowles, W. L. M., Spooner.
Knox, C. S., Superior.
Knox, E. S., Green Bay.
Knutson, O., Osseo.
Koch, H. C., Whitehall.
Koch, M. J., Milwaukee.
Koch, V. W., Janesville.
Koehler, A. G., Oshkosh.
Koehler, J. P., Milwaukee.
Korthals, F. J., Milwaukee.
Kosanke, F. E., Watertown.
Kovats, F. C., Milwaukee.
Kradwell, W. T., Wauwatosa.
Krahn, A. J., Beaver Dam.
Krahn, G. W., Oconto Falls.
Kratsch, A. W., Milwaukee.
Kraut, Elgie, Lancaster.
Kreltzer, A. J., Sawyer.
Kremers, Alex, Milwaukee.
Kreutzer, A. G., Milwaukee.
Kristjanson, H. T., Milwaukee.
Kriz, G. H., Milwaukee.
Krohn, H. C., New Holstein.
Kron, L. O., Menomonie.
Krueger, B., Cudahy.
Krygiar, A. A., Milwaukee.
Kulig, A. H., Turtle Lake.
Kunny, B., Baldwin.
Kyes, S. M., Owen.
Kyllo, J. C., Superior.

LaBreck, F. A., Eau Claire.
*Lacey, S. W., Footville.
Lademann, O. E., Milwaukee.
Ladewig, A. W., Milwaukee.
Ladewig, H. C., Baraboo.
Ladwig, W. A., Wausau.
Laird, J. J., Black Creek.
Lalor, J. C., Sauk City.
Lambeck, F. J., Milwaukee.
Lang, Jacob, Milwaukee.
Langenfeld, P. F., Theresa.
Langland, P., Milwaukee.
Lansdowne, F. B., Kenosha.
Larsen, G. A., Hayward.
Larson, L. A., Colfax.
Lauder, C. E., Viroqua.
Laughlin, D. M., Milwaukee.
Law, W. G., Ashland.
Lawhorn, C. C., Milwaukee.
Lawler, C. F., Hilbert.
Lawler, G. W., Sussex.
Lawler, T. S., Lyndon Station.
Lawrence, G. H., Stevens Point.
Layton, O. M., Fond du Lac.
Leahy, J. D., Butternut.
Leaper, W. E., Green Bay.
LeCron, W. L., Milwaukee.
Lee, J. H., Madison.
Lee, M. A., Superior.

*Deceased.
**Honorary.

Leeson, F. W., Beloit.
Lehnkering, C. F., Darlington.
Leicht, Philip, Lake Mills.
Leitch, G. W., Milwaukee.
Leitzell, P. W., Beuton.
Leland, A. M., Whitewater.
Lemmel, J. T., Albany.
Lemmer, G. M., Spooner.
*Lemon, C. H., Milwaukee.
Lenfesty, J. P., De Pere.
Leonnard, C. W., Fond du Lac.
Lettenberger, Jos., Milwaukee.
Levitas, I. E., Green Bay.
Lewis, C. H., Milwaukee.
**Lewis, Dean, Chicago.
Lewis, J. M., Bloomington.
Lewis, Marion, Milwaukee.
Lid, T. A., Marinette.
Liefert, Wm. C., Milwaukee.
Lillie, O. R., Milwaukee.
Lindores, J. D., Stevens Point.
Lindsay, W. T., Madison.
Linger, E. A., Oconto.
*Linkman, E. J., Milwaukee.
Linn, W. N., Oshkosh.
Lintleman, F. R., Janesville.
Lippitt, Eleanore, Milwaukee.
Lippitt, S. H., Milwaukee.
*Little, W. D., Maiden Rock.
Lobedan, E. T., Milwaukee.
Lochemes, W. T., Milwaukee.
Lockhart, C. W., Mellen.
Lockhart, J. W., Oshkosh.
Loevenhart, A. S., Madison.
Lohmiller, R. K., Superior.
Longley, J. R., Fond du Lac.
Loomis, E. A., Janesville.
Loomis, E. E., Janesville.
Loope, T. E., Iola.
Looze, A. J., Stevens Point.
Looze, J. J., Grand Rapids.
Lorenz, W. F., Mendota.
*Lothrop, C. A., Wis. Veterans Home.
Lotz, Oscar, Milwaukee.
Loughlin, T. J., Hartford.
Loughnan, A. J., Oconomowoc.
Ludden, H. D., Mineral Point.
Lueck, G. W., La Crosse.
Luhman, F. S., Manitowoc.
Lumsden, Wm., Menomonie.
Lundmark, L. M., Ladysmith.
Lyman, J. V. R., Eau Claire.
Lynch, D. W., West Bend.

McCabe, P. G., Fond du Lac.
*McCallin, A. E., Wis. Veteran Home.
McCann, Edith, Milwaukee.
McCarey, A. J., Green Bay.
McCarthy, G. W., Kenosha.
McCarthy, H. C., Richland Center.
McCarty, E. O., Knapp.
McChesney, W. M., Edgerton.
McClure, G. H., Westboro.
McComb, I. N., Brillion.
McCorkle, S. C., Milwaukee.
McCormick, H., New Auburn.
McCormick, W. C., Tomahawk.
McCoy, L. L., Madison.
McCracken, J. O., Kenosha.
McCracken, R. W., Union Grove.
McCutcheon, W. R., Thorp.
McDermott, L. C., Gratiot.
McDill, J. R., Washington, D. C.
McDonald, H. F., Hollendale.
McDougall, G. T., Fond du Lac.
McDowell, A. J., Soldiers Grove.
McEachern, W. A., Superior.
McGarty, M. A., La Crosse.
McGauley, F. M., Fond du Lac.
McGill, P. J., Superior.
McGonigal, M., Loyal.
McGovern, J. J., Milwaukee.
McGovern, P. H., Milwaukee.
McGrath, E. F., Appleton.
McGrath, Edw., Baraboo.
McGinnis, H. S., Medford.
McGuire, W. H., Janesville.
McHugh, F. T., Chippewa Falls.
McIndoe, T. B., Rhinelander.
McKee, F. W., Richland Center.
*McKivett, W. M., Milwaukee.
McKeon, Philip, New Richmond.
McKnight, G. B., Fond du Lac.
McLaughlin, H. J., Bloomington.
McMahon, E. B., Milwaukee.
McMahon, H. O., Milwaukee.
McMahon, J. P., Milwaukee.
McNaughton, W. T., Milwaukee.
McNicholas, L. T., La Crosse.
McRae, J. D., Chippewa Falls.
McRae, M. F., Milwaukee.
Maas, W. C., Rio.

MacArthur, D. S., La Crosse.
Macaulay, E. M., Wausau.
MacCollum, C. L. R., Manitowoc.
MacCormack, E. A., Whitehall.
MacCormack, R. L., Blair.
MacDonald, W. H., Lake Geneva.
MacGregor, S. A., Westfield.
MacKechnie, R. S., Hillsboro.
MacKinnon, G. E., Prentice.
Mackoy, F. M., Milwaukee.
MacLachlan, W. G., McFarland.
MacLaren, J. B., Appleton.
MacMillan, A. E., Stevens Point.
Madison, J. D., Milwaukee.
Maechtle, E. W., West Allis.
Maercklein, O. W., Milwaukee.
Maes, C. G., Kimberly.
Majerus, P. J., Ft. Atkinson.
Malloy, T. E., Random Lake.
Malone, F. A., Waterford.
Malone, T. C., Milwaukee.
Malone, W. F., Milwaukee.
Marek, F. B., Racine.
Markson, S. M., Milwaukee.
Marquis, A. J., Wausaukee.
Marrs, F. A., Stevens Point.
Marsden, T. H., Fennimore.
Marsh, H. E., Madison.
Marsh, J. M., Elkhorn.
Marshall, F. P., Fond du Lac.
Marshall, V. F., Appleton.
Martens, W. A., Milwaukee.
Martin, H. G., Milwaukee.
Mason, C. H., Superior.
Mason, E. L., Eau Claire.
*Mason, G. F., Milwaukee.
Mason, V. A., Marshfield.
Mast, B. W., La Crosse.
Mathiesen, J., Eau Claire.
Matthews, J. B., Milwaukee.
Mauermann, J. F., Monroe.
Maurer, A. A., La Crosse.
Maxson, F. S., Milwaukee.
May, J. V., Marinette.
Mayfield, A. L., Kenosha.
Meachem, J. G., Jr., Racine.
Meachem, J. G., Sr., Racine.
Meacher, B. C., Portage.
Meade, F. S., Madison.
Meany, J. E., Manitowoc.
**Meek, W. J., Madison.
Mehigan, D. D., Milwaukee.
Meiklejohn, D. V., Fond du Lac.
Melaas, W. G., Beloit.
Melster, W. H., Milwaukee.
Mensing, E., Milwaukee.
Merrill, W. G., Grand Rapids.
Merten, A. N. E., Milwaukee.
Merten, P. J., Milwaukee.
Mertens, H. G., Bayfield.
Mesch, A. A., Saukville.
Messmer, C., Milwaukee.
Metcalf, G. S., Janesville.
Meusel, Harry, Oshkosh.
Meyer, E. E., Brillion.
Meyer, R. C., New Holstein.
Meyers, C. E., North Freedom.
Meyers, E., Superior.
Meyers, J. M., Superior.
Middleton, W. S., Madison.
Midelfart, H. C., Eau Claire.
Mieding, A. E., Milwaukee.
Milbee, H. H., Marshfield.
Millard, F. D., Milwaukee.
Miller, E. A., Clintonville.
Miller, E. W., Milwaukee.
Miller, H. C., Whitewater.
Miller, M. H., Orfordville.
Miller, Thos., Oconomowoc.
Miller, W. J., La Valle.
Miller, W. S., Madison.
Mills, N. P., Appleton.
Minahan, J. J., St. Nazianz.
Minahan, J. R., Green Bay.
Minahan, P. R., Fond du Lac.
Minahan, R. E., Green Bay.
Mishoff, I. D., Milwaukee.
Mitchell, E. J., Brodhead.
Mitchell, F. W., Ogema.
Mitchell, R. E., Eau Claire.
Mitchell, S. R., Milwaukee.
Mock, F. C., Milwaukee.
Moe, H. B., Blanchardville.
Moeller, J., Milwaukee.
Moeller, M. W., Milwaukee.
Moffat, H. L., Arpin.
Mollinger, S. M., Milwaukee.
Monk, R. W., Neillsville.
Monroe, W. B., Monroe.
Montgomery, A., Milwaukee.
Montgomery, R. C., Madison.

Moore, E. E., Merrillan.
Moore, G. E., Antigo.
Moore, G. W., Antigo.
Moore, L. A., Monroe.
Moore, W. N., Appleton.
Moraux, Felix, Luxemburg.
Morgan, J. J., Durand.
Morgan, Mary E., Washington, D. C.
Morgenroth, H. W., Oshkosh.
Mork, Ole, Blair.
Morley, F. E., Viroqua.
Morris, E. K., Merrill.
Morris, R. C., Ft. Atkinson.
Morris, Sarah J., Madison.
Morrison, M., Cashton.
Morrison, W. W., Edgerton.
Morse, E. A., Appleton.
Mortenson, O. N., Grand Rapids.
Morter, C. W., Milwaukee.
Morter, R. E., Milwaukee.
Morton, H. H., Cobb.
Moyer, S. R., Monroe.
Muckerheide, A. J., Milwaukee.
Mudroch, J. A., Columbus.
Mueller, W. E., Green Bay.
Mulsow, J. E., Milwaukee.
Mulvaney, F. M., Marion.
Munger, D. C., Ellsworth.
Munkwitz, F. H., Milwaukee.
Munn, W. A., Janesville.
*Murphy, E. C., Kenosha.
Murphy, E. R. F., Antigo.
Murphy, F. B., Milwaukee.
Murphy, G. F., Stratford.
Murphy, S. W., Kenosha.
Murphy, W. J., Milwaukee.
*Muth, Carl, Sheboygan.
Myers, I. A., Cottage Grove.
Myrick, A. L., DeSota.

Nadeau, A. T., Marinette.
Nadeau, E. G., Green Bay.
Nainka, A., Gleason.
Nason, W. C., Ripon.
Nause, F. A., Sheboygan.
Nauth, D. F., Kiel.
Nedry, G. C., Medford.
Nedry, H. M., Wakefield, Ohio.
Nee, Frank, Spring Green.
Neilson, C. S., Withee.
Neilson, G. W., Milwaukee.
Neilson, W. H., Milwaukee.
Neis, F. P., Plainfield.
Nelson, A. L., Racine.
Nelson, A. N., Clear Lake.
Nelson, James D., Milwaukee.
Nelson, N. O., Madison.
Nelson, O. O., Arcadia.
Nelson, W. V., Milwaukee.
Netvig, G. A., Prairie Farm.
Newell, G. W., Burlington.
Newman, Robt., Chicago.
Newton, J. E., Hudson.
Nicely, W. E., Waukesha.
Nichols, F. C., Wausau.
Nichols, R. M., Sheboygan Falls.
Nichols, W. T., Milwaukee.
Nims, C. H., Oshkosh.
Nixon, H. G. B., Hartland.
Nixon, R. T. A., Brookfield.
Noble, J. B., Waukesha.
Nobles, B. O., Milwaukee.
Noer, Julius, Long Beach, Cal.
Noer, P. J., Wabeno.
Nolan, W. N., Kaukauna.
Nolte, L. G., Milwaukee.
Notbohm, W. R., Dousman.
Nott, G. W., Racine.
Nowack, L. H., Watertown.
Noyes, G. B., Stone Lake.
Nuzum, T. W., Janesville.
Nuzum, W. F., Baraboo.
Nystrum, C. E., Medford.

O'Brien, H. N., Darien.
O'Brien, J. M., Oregon.
*O'Brien, T. J., St. Nazianz.
*O'Brien, W. T., Ashland.
O'Connell, D. C., Milwaukee.
O'Connell, J., Watertown.
O'Connell, J. E., Milwaukee.
O'Connor, W. F., Ladysmith.
O'Leary, T. J., East Troy.
O'Leary, T. J., Superior.
O'Malley, T. S., Milwaukee.
O'Neil, Orville, Ripon.
Oakland, H. G., Milwaukee.

*Deceased.
**Honorary.

Oatway, W. H., Waukesha.
Oberembt, B., Milwaukee.
Oettiker, Jas., Platteville.
Ogden, H. V., Milwaukee.
Ohswald, H. F., Oconto Falls.
Oleson, Robt., Madison.
Oliver, T. J., Green Bay.
Olmsted, A. O., Green Bay.
Olson, A. K., Ettrick.
Olson, C., Racine.
Olson, E. A., Osseo.
Omsted, Nils, Stoughton.
Orchard, H. J., Superior.
Orr, E. D., Mt. Hope.
Orton, Susanne, Darlington.
Ott, H. A., Dale.
Ottow, A. F., Beloit.
Ouellette, C. J., Oconto.
Overbaugh, J. H., Hartland.
Ovitz, E. G., Laona.
Owens, W. H., Milwaukee.
Ozanne, I. E., Neenah.
Ozanne, J. T., Oshkosh.

Packard, C. D., Rhinelander.
Palm, C. A., Kenosha.
Palmer, C. W., Cassville.
Palmer, J. A., Arcadia.
Palmer, W. H., Janesville.
Palt, Jos., Kenosha.
Panetti, E. J., Milwaukee.
Panetti, P. A., Hustisford.
Park, W. H., Glenwood City.
Parke, Geo., Viola.
Parker, A. S., Clinton.
Parker, T. G., Union Grove.
Partridge, C. D., Wausau.
Partridge, O. F., Mattoon.
Paschen, J. G., Milwaukee.
Patek, A. J., Milwaukee.
Payne, A. L., Eau Claire.
Pearce, W. J., Dodgeville.
Pearson, L. M., Tomahawk.
Pease, W. A., Jr., Rio.
Peck, W. W., Darlington.
Peebles, Mary, Shullsburg.
Peehn, F. G., Corliss.
Pegram, J. W., Milwaukee.
Pelton, L. H., Waupaca.
Pember, J. F., Janesville.
Pembleton, W. E., Wittenberg.
**Pennoyer, N. A., Kenosha.
Perrin, G. H., Menomonee Falls.
Perrin, H. E., Star Prairie.
Perry, Gentz, Amery.
Peters, H. A., Oconomowoc.
Peterson, C. F., Independence.
Peterson, E. F., Wauwatosa.
Peterson, G. E., Waukesha.
Peterson, R. O., Racine.
Petzke, E. A., Hixton.
Pfeffer, E. N., Milwaukee.
Pfelfer, C. W., Sheboygan Falls.
Pfeifer, F. J., New London.
Pfeifer, H. A., Jackson.
Pfeil, R. C., Milwaukee.
Pfeiler, A. G., Sheboygan Falls.
Pfister, Franz, Milwaukee.
Pfisterer, F. W., Markesan.
Phalan, C. S., Sparta.
Phaneuf, S. J., Somerset.
Pickering, C. R., Muscoda.
Pickett, S. L., Bayfield.
Pierson, P. R., Readstown.
Pinkerton, W. T., Prairie du Chien.
Pippin, B. C., Excelsior.
Pittinger, E. A., Milwaukee.
Pitz, M. N., Neenah.
Pleyte, A. A., Milwaukee.
Pomainville, Frank, Grand Rapids.
Pomainville, Geo., Nekoosa.
Pope, F. J., Racine.
Pope, F. W., Racine.
Poser, E. M., Columbus.
Post, C. C., Barron.
Potter, J. Y., New London.
Potter, L. A., Superior.
Potter, R. P., Marshfield.
Powell, J. J., Galesville.
Powers, C. D., Kingston.
Powers, H. W., Milwaukee.
Powers, J. W., Milwaukee.
Pratt, G. N., Appleton.
Pratt, Maud, Shell Lake.
Pretts, W. W., Platteville.
Prince, L. H., Sparta.
Pritchard, J. F., Manitowoc.
Proctor, T. C., Sturgeon Bay.
Prokopik, M., Luhlin.
Prouty, W. A., Burlington.

Pugh, G. A., Kenosha.
Pugh, Wm., Kenosha.
Pullen, A. J., No. Fond du Lac.
Puls, A. J., Milwaukee.
Purcell, H. E., Madison.
Purdy, F. A., Oshkosh.
Purtell, E. J., Milwaukee.
Purtell, J. A., Milwaukee.

Quade, E. B. Wausau.
Quam, Jacob, Deerfield.
Quick, E. W., Milwaukee.
Quin, J. F., Milwaukee.
Quinn, R. B., Darlington.

Raasock, H., Nelsonville.
Radloff, A. C., Plymouth.
Ragan, W. F., Milwaukee.
Ragan, W. J., Shawano.
Randall, M. W., Blue River.
Rasmussen, H., Milwaukee.
Rath, R. R., Granton.
Rathert, E. T., Chilton.
Ravn, E. O., Merrill.
Ravn, M., Merrill.
Raymond, R. G., Brownsville.
Rea, A. L., Chicago Ill.
Reay, G. R., La Crosse.
Rector, A. E., Appleton.
Redelings, T. J., Marinette.
Reeve, J. S., Appleton.
Reeves, S. T., Albany.
Regan, E. D., Milwaukee.
Rehorst, J. J., Fond du Lac.
Reich, H. C., Sheboygan.
Reich, W. F., Milwaukee.
Reichert, J. E., West Bend.
Reineck, C., Appleton.
Reineking, H., Milwaukee.
Reineking, W. C., Statesan.
Reinert, E. N., Cleveland.
Reinhardt, J. P., Fountain City.
Reinhart, D. B., Merrill.
Reis, G. W., Junction City.
Remer, W. H., Chaseburg.
Rheineck, A. F., Milwaukee.
Rhode, H. P., Green Bay.
Ribenack, G. A., Bloomer.
Rice, C. W., Delavan.
Rice, D. S., Stevens Point.
Rice, E. M., Milwaukee.
Rice, F. A., Delavan.
Rice, M. H., Gresham.
Rice, R. H., Milwaukee.
Richards, C. A., Rhinelander.
*Ridgman, A. L., Grand Rapids.
Ridgway, E. T., Elkhorn.
Riegel, J. R., St. Croix Falls.
Riehl, F. W., Milwaukee.
Riley, P. E., Eau Claire.
Ringo, H. F., Montreal.
Riopelle, W. G., Thorp.
Riordan, J. F., Berlin.
Ripley, G. H., Kenosha.
Ripley, H. M., Kenosha.
Ritchie, G. A., Appleton.
Robb, J. J., Green Bay.
Robbins, G. H., Madison.
Roberts, D. W., Milwaukee.
Roberts, J. A., Portage.
Robinson, H. A., Kenosha.
Roby, H. S., Milwaukee.
Rock, J. N., Milwaukee.
Rock, J. W., Milwaukee.
Roethke, R. W., Milwaukee.
Roger, D., Oshkosh.
Rogers, A. W., Milwaukee.
Rogers, E. H., Stevens Point.
Rogers, F. C., Oconomowoc.
Rogers, P. F., Milwaukee.
Rohr, J. H., North Milwaukee.
Rolfs, T. H., Milwaukee.
Rollefson, C. J., Superior.
Rood, J. F., Darien.
Rose, J. F., Lena.
Rosenberger, A. I., Milwaukee.
Rosenberry, A. B., Wausau.
Rosenheimer, M. A., Fox Lake.
Rosholt, J. A., La Crosse.
Ross, G. L., Kenosha.
Ross, H. R. T., Ladysmith.
Ross, J. M., Bloom City.
Ross, P. M., Milwaukee.
Roth, W. C., Franksville.
Rothman, L., Wittenberg.
Rouse, H. A., Browntown.
Rowles, J. A., La Crosse.
Rudolf, A. J., Milwaukee.
Ruckle, W. M., Grand Rapids.
Rueth, J. E., Milwaukee.

Ruethen, K. A., Ridgeland.
Rugh, R. E., Racine.
Ruka, E. A., Muscoda.
Rundell, Annie S., Beloit.
Rupp, L. G., Sullivan.
Ruschaupt, L. F., Milwaukee.
Russell, Frank, Weyauwega.
Russell, F. G., Milwaukee.
Russell, H. C., Milwaukee.
Ryan, C. E., Appleton.
Ryan, E., Sheboygan.
Rydell, C. B., Superior.

Salbreiter, W. P., Racine.
Salter, H. G., Cascade.
Saudborn, M. J., Appleton.
Sauders, J. B., Beaver Dam.
Sandin, N. V., Amery.
Sarazin, F. C., Superior.
Sargent, H. W., Milwaukee.
Sargent, J. C., Milwaukee.
Sarles, W. T., Sparta.
Sarvela, H. L., Superior.
Sattler, J., Bear Creek.
Sattre, O. M., Rice Lake.
Sauerhering, D. L., Wausau.
Saunders, Geo., Superior.
Sauthoff, Aug., Mendota.
Sauthoff, Mary, Mendota.
Savage, G. F., Pt. Washington.
Savage, G. T., Milwaukee.
Sayle, R. G., Milwaukee.
Sayles, L. W., Baraboo.
Scantleton, J. M., Sparta.
Schaefer, C. O., Racine.
Schaper, H., Appleton.
Schee, John, Westby.
Scheid, M. M., Rosendale.
Scheiu, J. E., Oshkosh.
Schell, Ida L., Milwaukee.
Scheller, A. A., Wauwatosa.
Schemmer, A. L., Colby.
Scheurich, L. G., Tomah.
Schick, I. E., Rhinelander.
Schiller, L., Milwaukee.
Schlag, R. A., Prairie du Sac.
Schlegel, H. T., Wausau.
Schlenker, G. H., Menomonie.
Schlesselman, G. H., Taylor.
Schloemilch, A., Portage.
Schlomovitz, B. H., Milwaukee.
Schlueter, U. A., Milwaukee.
Schmeling, A. F., Columbus.
Schmidt, E. S., Green Bay.
Schmidt, F. M., Eagle.
Schmidt, H. E., Wauwatosa.
Schmidt, J. A., Brillion.
Schmit, A. I., Beloit.
Schmitt, Felix, Milwaukee.
Schmitt, Gus., Milwaukee.
Schmitt, Louis, Milwaukee.
Schmitt, Phil., Milwaukee.
Schmitz, W. C., Manitowoc.
Schneider, Fred, New London.
Schneider, J. F., Oshkosh.
Schneider, Jos., Milwaukee.
Schnell, W. H., Superior.
Schnug, Max, Durand.
Schoen, C., Milwaukee.
Schoen, R. E., Beaver Dam.
Scholter, E. W., Milwaukee.
Scholz, G. M., Milwaukee.
Schoofs, J. J., Fond du Lac.
Schoofs, O. P., Malone.
Schram, C. F. N., Beloit.
Schreiner, J. K., Two Rivers.
Schroeckenstein, R. S., Marion.
Schroeder, E. L., Shawano.
Schroeder, H. F., Marinette.
Schroeder, J. C., Milwaukee.
Schuldt, C. M., Platteville.
Schultz, F. M., Pasadena, Calif.
Schumm, H. C., Milwaukee.
Schwalbach, C. G., Juneau.
Schwartz, A. B., Milwaukee.
Schwartz, B. J., Kenosha.
Schwartz, Rollin, Chippewa Falls.
Schwarz, S. G., Humbird.
Schweitzer, G. J., St. Cloud.
Scollard, J. T., Milwaukee.
Scollard, W. J., Milwaukee.
Scott, B. E., Berlin.
Seaman, G. E., Milwaukee.
Searle, D. R., Superior.
Sears, H. B., Beaver Dam.
Seeger, S. J., Milwaukee.
Seelman, J. J., Milwaukee.

*Deceased.
**Honorary.

Seemann, W. O., Eau Claire.
Seiherth, J., Lugerville.
Seidel, J. G., Warrens.
Senn, C. U., Ripon.
Senn, F. C., Oshkosh.
Senn, Geo., Green Bay.
Senn, U., Milwaukee.
Seymer, L. A., Wauwatosa.
Sexton, W. G., Marshfield.
Shafferzick, Chas., Spokane, Wash.
Sharpe, H. A., Verona.
Sharpe, J. J., Fond du Lac.
Shastid, T. H., Superior.
Shaw, A. O., Ashland.
Shaw, B. W., Waunakee.
Shaw, J. L., Manitowoc.
Shaykett, F. E., Brandon.
Shearer, A. T., Edgerton.
Shearer, F. E., Edgerton.
Shearer, H. A., Edgerton.
Sheehy, T. J., Tomah.
Sheldon, C. S., Madison.
Sheldon, W. H., Madison.
Shepherd, E. L., Brandon.
Shepherd, W. A., Seymour.
Sherman, A., Winnebago.
Sherwood, M. W., Milwaukee.
Shimek, A. J., Manitowoc.
Shockley, H. O., Darlington.
Shutter, H. W., Milwaukee.
Sibree, H. C., Sturgeon Bay.
Sickles, W. A., Milwaukee.
Sieker, A. W., Franklin.
Siekert, H. P., Milwaukee.
Sifton, H. A., Milwaukee.
Simon, L. J., Fond du Lac.
Simones, V. L., La Crosse.
Simons, N. S., Taylor.
Simpson, J. E., Montello.
Sincock, H. A., Odanah.
Sisk, I. R., Madison.
Sivertson, Martin, La Crosse.
Sivyer, A. W., Milwaukee.
Sizer, E. M. A., Eau Claire.
Skemp, A., La Crosse.
Skwor, C. J., Mishicott.
Sleyster, Rock, Wauwatosa.
Smedal, E., La Crosse.
Smiles, C. J., Ashland.
Smiley, R. B., Stevens Point.
Smith, A. D., Glimanton.
Smith, C. E., Beloit.
Smith, D. S., La Crosse.
Smith, E. A., Milwaukee.
Smith, E. V., Fond du Lac.
Smith, Geo., Hortonville.
*Smith, G. L., Jefferson.
Smith, G. M., Chippewa Falls.
Smith, J. C., Beloit.
Smith, Jos. F., Wausau.
Smith, K. W., Madison.
Smith, O. E., Mukwonago.
Smith, R. C., Superior.
Smith, S. M., Milwaukee.
Smith, S. M. B., Wausau.
Smith, T. D., Neenah.
Snodgrass, T. J., Janesville.
Solberg, A. A., Coon Valley.
Soles, F. A., Spencer.
Sommers, J. C., Madison.
Sonnenburg, C. N., Sheboygan.
Sorenson, S., Racine.
Southwick, F. A., Stevens Point.
Spawn, M. G., Beloit.
Speck, J. T., Park Falls.
Spencer, L. E., Wausau.
Sperry, S. B., Milwaukee.
Sperry, W. P., Phillips.
Spiegelberg, E. H., Boscobel.
Spitz, M. M., Milwaukee.
Sporleder, Otto, Reedsburg.
Sproule, Ralph, Milwaukee.
Squire, C. A., Sheboygan.
Stack, G. F., Independence.
Stack, S. S., Milwaukee.
Staehle, Max, Manitowoc.
Stalker, H. J., Kenosha.
Stamm, L. P., Milwaukee.
Stanley, W. S., Milwaukee.
Stannard, G. H., Sheboygan.
Starnes, B., New Lisbon.
Stebbins, W. W., Madison.
Steele, G. A., Oshkosh.
Steele, G. M., Oshkosh.
Steffen, I. D., Antigo.
Steffen, L. A., Antigo.
Stein, J. F., Oshkosh.
Stemper, I. G., Milwaukee.
Stephenson, W. L., Brodhead.
Steuck, A. F., Manitowoc.

*Stevens, F. E., Bristol.
Steves, B. J., Menomonie.
Stewart, F. W., Sheldon.
Stewart, W. C., Kenosha.
Stiennon, O. A., Green Bay.
Stiles, V. W., Sparta.
Stirn, F. J., Dubuque, Ia.
Stockman, B. G., Woodville.
Stoddard, C. H., Milwaukee.
Stoelting, C. W., Oconto.
Stoland, I., Eau Claire.
Stoltz, C. E., Milwaukee.
Stovall, W. D., Madison.
Stoye, J. P., Theresa.
Stranberg, W. L., Milwaukee.
Strass, H. W., Milwaukee.
Stratton, F. A., Milwaukee.
Strauss, F., Milwaukee.
Strong, R. G., Beloit.
Stubenvoll, C. E., Shawano.
Studley, F. C., Milwaukee.
Stuesser, C. N., Ashippun.
Suiter, F. C., La Crosse.
Sullivan, A. G., Madison.
Sullivan, E. S., Madison.
Sullivan, J. D. Kenosha.
Sullivan, J. T., Milwaukee.
**Sullivan, W. E., Madison.
Sure, J. H., Milwaukee.
Surenson, M., Viroqua.
Sutherland, C. H., Janesville.
Sutherland, F. E., Janesville.
Suttle, H. J., Viroqua.
Swarthout, E. C., La Crosse.
Sweemer, Wm., Milwaukee.
Sykes, H. D., Milwaukee.
Sykes, L. G., Milwaukee.
Sylvester, H., Madison.

Tanner, E. E., Milwaukee.
Tanner, G. F., Turtle Lake.
Tarter, J. W., Iron River.
Tasche, C. T., Sheboygan.
Tasche, J. T., Sheboygan.
Taugher, A. J., Milwaukee.
Taugher, J. P., Milwaukee.
Taugher, P. J., Marathon.
Taugher, V. J., Marathon.
Taylor, A. R., Brodhead.
Taylor, E. A., Racine.
Taylor, F. B., Madison.
Taylor, J. G., Milwaukee.
Taylor, L. L., Waupun.
Taylor, R. W., Pewaukee.
Taylor, W. A., Portage.
Teich, Wm., Cecil.
Terlinden, J. H., Bonduel.
*Teschan, R. C., Milwaukee.
Teschan, R. F., Milwaukee.
Thackery, R. C., Racine.
Thalhimer, Wm., Milwaukee.
Tharinger, E. L., Milwaukee.
Thayer, F. A., Beloit.
Thielke, G. A., Wausau.
Thienhaus, C. O., Milwaukee.
Thill, D. P., Milwaukee.
Thomas, J. S., Milwaukee.
Thomas, W. O., Clinton.
Thompson, A. S., Mt. Horeb.
Thompson, B. V., Oshkosh.
Thompson, E. X., Cudahy.
Thompson, F. A., Milwaukee.
Thompson, G. E., Kenosha.
Thompson, I. F., Madison.
Thompson, J. B., Wittenberg.
Thompson, R. D., Reedsburg.
Thompson, W. L., Madison.
Thomson, W. J., Portage.
Thorndike, Wm., Milwaukee.
Thorne, J. P., Janesville.
Tibbits, U. J., Waukesha.
Tillson, E. M., Milwaukee.
Timm, E. W., Milwaukee.
Tindall, F. G., Belleville.
Tisdale, L. C., Milwaukee.
Titel, E. A., Greenleaf.
Tkadlec, Jos., Cazenovia.
Tompach, Emil, Racine.
Toner, T. J., Kenosha.
Toothaker, J. E., Algoma.
Tormey, A. R., Madison.
Tormey, T. W., Madison.
Torpy, T. G., Minocqua.
Towne, W. H., Shiocton.
Townsend, E. H., Jr., La Crosse.
Townsend, E. H., Sr., New Lisbon.
Townsend, Elma J., Madison.
Tranckle, H. M., Bloomer.
Treat, C. R., Sharon.

Treglown, L. H., Livingstou.
Treutzch, M. W., Highland.
Trevitt, Margaret, Wausau.
Trowbridge, Chas. H., Viroqua.
Trowbridge, P. T., Hayward.
Trowbridge, Wm., Viroqua.
Truitt, J. W., Milwaukee.
Tryon, F. E., Baraboo.
Tuffley, F. S., Boscobel.
Tupper, E. E., Eau Claire.
Turgasen, F. E., Marshfield.
Twohig, D. J., Fond du Lac.
Twohig, H. E., Fond du Lac.
Twohig, J. E., Fond du Lac.
Tyvand, J. C., Whitehall.

Urheim, O. J., Park Falls.

Vachitinsky, S., Milwaukee.
Valentine, L. P., Racine.
Van Altena, Jr., L. A., Cedar Grove.
Van de Erve, W., Milwaukee.
Van Hengel, G. L., Waupun.
Van Kirk, F. W., Janesville.
Van Schalck, R. E., Caroline.
Van Slyke, L. H., Knapp.
Van Valzah, Roht., Madison.
Van Westrienen, A., Kenosha.
Van Zanten, Wm., Sheboygau.
Vedder, H. A., Marshfield.
Vedder, J. B., Marshfield.
Venning, J. R., Bagley.
Verbeck, S. F., Lodi.
Ver Meulen, J. R., Waupun.
Vogel, C. A., Elroy.
Vogel, C. C., Elroy.
Voight, A. H., Oostburg.
Voight, O. P., Gillette.
Voje, J. H., Oconomowoc.
Von Beust, M., Milwaukee.
Von Buddenbrock, E., Racine.
Von Neupert, Carl, Jr., Stevens Point.
Von Neupert, Carl, Sr., Stevens Point.
Vosburg, W. H., Denmark.
Voskuil, A., Cedar Grove.

Wade, F. S., New Richmond.
Wadey, B. J., Belleville.
Wagner, N. B., Racine.
Wahl, E. C., Black Hawk.
Wahl, H. S., Wausau.
Wahle, G. H., Eau Claire.
Waite, W. S., Kendall.
Wakefield, G. F., West Salem.
Wakefield, S. R., West Salem.

*Deceased.
**Honorary.

Walbridge, F. E., Stevens Point.
Walch, F. C., Black Creek.
Waldschmidt, J. W., Fond du Lac.
Waldschmidt, W. J., Fond du Lac.
Walker, F. W., St. Croix Falls.
Walker, L. G., Pound.
Wallis, J. H., Rice Lake.
Walsh, C. C., Merrill.
Walters, D. N., Fond du Lac.
Warfield, L. M., Milwaukee.
Was, Edward, Oostburg.
Washburn, R. G., Milwaukee.
Washburn, W. H., Milwaukee.
Waters, Don, Grand Rapids.
Waters, Hugh. Nekoosa.
Watkins, W. C., Oconto.
Watson, F. V., Antigo.
Waufle, G. C., Janesville.
Weaver, L. A., Iron Belt.
Webb, E. P., Beaver Dam.
Webb, W. B., Beaver Dam.
Weber, A. J., Milwaukee.
Weber, F. T., Arcadia.
Weber, H. F., Newburg.
Webster, B. N., Rice Lake.
Webster, F. E., Amberst.
Wedge, A. H., Cambria.
Wegge, W. F., Milwaukee.
Wehle, W. J., West Bend.
Weideman, W. G., Milwaukee.
Weingart, W. F., Milwaukee.
Weisgerber, A. L., Superior.
Welch, F. B., Janesville.
Wenker, R. J., Milwaukee.
Wenn, J. F., Milwaukee.
Wenstrand, D. E. W., Milwaukee.
Wentzell, W. L., Beaver Dam.
Wenzel, J. V., Ashland.
Werner, C. F., St. Cloud.
Werner, H. C., Union Grove.
Werner, Nels, Barron.
Werner, R. F., Eau Claire.
*Westedt, Otto, Loganville.
Westgate, H. J., Rhinelander.
Westhofen, R. C., Milwaukee.
Wetzler, S. H., Milwaukee.
Whalen, G. E., Milwaukee.
Wheeler, W. P., Oshkosh.
White, A. G., Milwaukee.
White, A. S., Rice Lake.
White, C. L., Mineral Point.
White, R. M., Prairie du Chien.
White, W. E., Burlington.
Whitehorn, E. E., Vesper.
Whyte, W. F., Madison.
Wichman, G. C., Rib Lake.
Wiesender, A. J., Berlin.
Wiger, H. C., Dallas.
Wilcox, A. G., Solon Springs.

Wiley, F. S., Fond du Lac.
Wilkinson, J. A., Hales Corners.
Wilkinson, M. R., Oconomowoc.
Wilkowski, C. W., Chippewa Falls.
Willard, L. M., Wausau.
Williams, A. J., Waukesha.
Williams, H. H., Sparta.
Williams, R. L., Statesan.
Williams, S. E., Chippewa Falls.
Williams, W. E., Cambria.
Williamson, G. H., Neenah.
Wilson, C. J., Winchester.
Windesheim, G., Kenosha.
Wing, W. S., Oconomowoc.
Winneman, F. A., Merrill.
Winslow, F. R., Hayden, Ariz.
Winter, A. E., Tomah.
Witte, Dexter H., Milwaukee.
Witte, W. C. F., Milwaukee.
Wittman, A. R., Merrill.
Wochos, F. J., Green Bay.
Wochos, W. M., Kewaunee.
Wolf, H. E., La Crosse.
Wolter, H. A., Green Bay.
Wolters, H. F., Milwaukee.
Wood, F. C., Waupaca.
Woodhead, F. J., Waukesha.
Wooll, G. K., Janesville.
Wright, C. A., Delavan.
Wright, E. A., New Richmond.
Wright, F. R., West Allis.
Wright, J. C., Antigo.

Yaffe, Aaron, Milwaukee.
Yanke, A. E., Milwaukee.
Yates, J. L., Milwaukee.
Youmans, L. E., Mukwonago.
Young, A. F., Wauwatosa.
Young, J. H., Elkhorn.
Young, M. L., Ashland.
Young, Will, Ft. Atkinson.

Zaegel, R. L., Sheboygan.
Zaun, G. F., Milwaukee.
Zelimer, C. E., Madison.
Ziegler, E. J., Oxford.
Ziegler, J. E. B., Eau Claire.
Zierath, W. F., Sheboygan.
Zilisch, W. E., Wausau.
Zimmerman, Amelia, Batavia, Ill.
Zimmermann, C., Milwaukee.
Zimmermann, W. C. L., Reedsburg.
Zinns, A. J., Milwaukee.
Zivnuska, J. F., Milwaukee.
Zohlen, J. P., Sheboygan.
Zuercher, J. C., Milwaukee.
Zwaska, A. B., Rockton, Ill.
Zwickey, W. H., Superior.

Some Observations on the Use of Arsphenamin: Its Effect on the Kidneys and Its Therapeutic Results. By Horace B. Anderson, M. D. The *American Journal of Medical Sciences.* Vol. 162, No. 1, July, 1921.

It is the purpose of the author to submit some evidence, after studying 39 cases which have had twenty or more doses of arsphenamin, to show the non-toxic effect of the drug on the kidneys when administered in therapeutic doses over a comparatively long period of time and at the same time to give some data concerning its value as a therapeutic agent. The average number of treatments for these 39 cases is approximately 30 doses, 14 treatments of arsphenamin per year for about 26 months. In summing up, the author makes the following points:

Because of its extensive use at present, it is highly important that we know more perfectly the effects of the prolonged use of arsphenamin on the kidneys.

Kidney functional tests on 39 cases after they had received thirty doses of arsphenamin, each dose consisting of 4.6 decigrams, and distributed over a two-year period, fail to give any conclusive evidence of injury to the kidneys.

The efficiency of any method of treatment must ultimately be determined by the Wassermann reaction. It is more trustworthy to use at least two antigens; the acetone insoluble antigen is a safe guide to diagnosis and the alcoholic extract reinforced by cholesterin is an excellent guide to treatment.

It is impossible to say how much arsphenamin and how many courses of mercury may be necessary to produce a negative Wassermann reaction in any given case.

Six injections of arsphenamin and one course of mercury, the amount too often prescribed by certain groups of physicians, may produce one negative Wassermann reaction, but the average case of secondary or tertiary syphilis will require twelve or more doses of arsphenamin and a corresponding amount of treatment with mercury to produce a negative Wassermann reaction, and one which only with further treatment may reasonably be expected to persist.

ORIGINAL ARTICLES

THE FATE OF THE BONE GRAFT.*

BY A. F. JONAS, M. D.,

OMAHA, NEBR.

Surgeons who have attempted to coaptate fractured bones by one or another of the many methods advocated and described since the advent of antiseptic and aseptic surgery, have had frequent occasions to pause and speculate as to what eventually becomes of the fixation materials used. We have long known that all metallic substances either become imbedded and remain permanently as foreign material which may give no annoyance to the individual nor irritate the tissues locally, or there may be a softening of the bony structures so that the appliance may become loose, cause more or less local discomfort requiring removal or, as occurs not infrequently, there is an infection with active suppuration necessitating early extraction. Its role is simply that of a fixation device, which is usually achieved, if applied in accordance with the exacting aseptic technique of Arbuthnot Lane. Unfortunately, few surgeons equal the great English master, consequently the majority of metallic devices are cast off in the resulting infection. It is clear that a metallic device can never become an integral part of the bone nor can it ever be absorbed.

The fate of all contrivances made of metal is clear and needs no extended consideration at this time. However, we cannot throw them into the discard altogether even though they have only a temporary residence in the tissues; even though they become loose and must be removed, they do serve a purpose in maintaining apposition sufficiently long to initiate repair, which would have been difficult or impossible with external splints only.

We are gradually getting away from metallic and other internal supports and we are returning to the time honored methods of seeking to secure alignment of fractured bones by suitable external splints that are designed to place the distal fragment of long bones, over which we have control, and adapting it to the proximal fragment over which we have no control and holding them both in a position by proper supports and traction with the aid of specially devised appliances that will favor union, in a normal position and thus avoid the all too frequent open operation. Unless open operations for fracture are done by a group of surgeons, assistants and nurses who have been trained to cooperate as a team and who have a well developed surgical conscience, the greater number of the cases terminate unfavorably which, of course, reflect on the efficiency of the method. The mechanical management is perhaps not so attractive as the average operation because not so dramatic and, further, because the mechanism of fracture involves a more accurate study of anatomy and a more exact application of mechanical principles and further, a constant watchfulness to be certain that apposition is maintained, therefore, the cutting surgeon says to himself, why all this eternal watchfulness when through an open wound the broken ends can be fixed with wire, screws, nails, bands, plates or grafts. But he does pause when he observes broken wires, loose screws, nails and plates, infected inlays and grafts, angulated and misplaced bones, and non-union in a train of infections. He then begins to eliminate from his operative list all such fractures that can be restored to good function by the time honored closed method and reserves for open operation those which cannot be adjusted manually. It has not taken him long to learn the frequent fate of the mechanical contrivance. He reserves it only for special occasions to hold together bone fragments that cannot be done in any other way.

There is perhaps no surgical procedure of recent times that has received so much attention as the transplantation of bone. This procedure has found a well deserved place, perhaps the first place, as a means of coaptating broken bones in the correction of skeletal deformities. The developmental period from its inception to its final recognition has been a long one. The study began with Havers, in 1692, who described the well known bone canals. Then followed a period of more or less important work until Dahamel, in 1739-1743, revealed the structure of the periosteum which is largely in accord with our modern conceptions. Troja in 1761, succeeded in producing necrosis of the long bones by inserting foreign substances into the medullary canal and he observed the development of new bone between the medulla and the periosteum. In spite of a more or less voluminous

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literature, a century passed before any important advance was made in the study of the growth of bone. Then, in 1867 Ollier, published his epoch making work "The osteogenesis of the periosteum." His views at that time were generally accepted. More recent observers have taken exception to his ideas on the osteo-genetic functions of the periosteum. Among the recent observers are Barth, who in 1893 insisted that the cellular elements of transplanted bone became necrotic and were replaced by new bone. In his opinion all grafts behaved in the same manner whether it was a living auto graft, homogeneous or a hetero graft or a boiled and devitalized bone. Axhausen, in 1898, was of the opinion that the periosteum was the chief osteogenetic agent. He sought to prove that the periosteum and endosteum were permanent structures but that the bone elements underwent necrosis.

In 1911, McEwan published his well known book on "The Growth of Bone". He sought to show that the periosteum was only a limiting membrane and that the osteo-blasts were the osteogenetic factors. E. W. Hay Groves, commenting on the apparently differing views of the foregoing four authors, has the following to say about the role of the periosteum.

The periosteum is chiefly a limiting membrane of the bone. The dense bone can live, grow and undergo repair and produce fresh periosteum after the latter has been removed. There is a deep layer of the periosteum which is closely attached to the bone, which he termed the epiosteum, which is capable of producing bone. When the periosteum is removed, without the epiosteum, it can produce no new bone.

Turning our attention to the function of the bone marrow, we find that the red marrow tissue, particularly its layer next to the bone, endosteum, has the capacity for osteogenisis. When grafted in such a manner that endosteum is contacted with endosteum, rapid vascularization of the graft ensues and it takes an active share in bone growth.

Oliver and McWilliams established the fact that compact bone lives and produces new bone. Barth and Axhausen's experiments seemed to show that the majority of cells in the compact tissue of a graft eventually die. Groves differs from the latter findings and insists that the whole of the compact structure of a graft does not always die, that it is more than a scaffolding which acts as a support until the growth and union is complete, and he believes that the osteoblast of the compact bone takes an active part in the process of repair if it has a proper blood supply; it is quite independent of periosteum and endosteum both for growth and repair. McWilliams demonstrated that compact bone grafts without periosteum made bone, they did live yet they were not so likely to do so as when transplanted with attached periosteum showing the importance of obtaining abundant blood supply to the epiosteum and endosteum. McWilliams further showed that when an autograft had been placed, the immediate result is the coagulation of all cells and vessels to which the surrounding lymph is unable to perculate, the result is death of cells in the lacunea and the Haversian canals on the surface of the graft and in the open mouths of the Haversian canals are many osteoblasts which absorb nutriment from the lymph, these cells are capable of living and proliferating; this view is supported by Gallie and Robertson. The osteoblasts attack the dead bone of the grafts. New blood vessels form at the mouths of the Haversian canals. The rapidity with which these changes take place depends on the density of the grafts. A transplant, from the tibial crest which is hard, undergoes the changes necessary for repair much more slowly than a cancellous bone, such as a rib. Several of our experiences with hard bone inlays where the underside of the inlays had to be placed where the bed did not contain medullary structure and, of course, no endosteum; repair was exceedingly slow, where, on the contrary, if the bed for the inlay extended into the medullary canal coaptating endosteum with endosteum, repair was sometimes apparently complete in six weeks. In a case of tibial fracture where a split rib was used as an inlay, firm union was attained in eight weeks, the graft had apparently become a part of the tibia. In another case of an unreduced tibial fracture of a year's duration, the ends of the bone including the medullary canal were occupied by a dense firm osseous growth. When the ends of the fragments had been vivified, firm bony growth filled the medullary canal, consequently, when the bone fragments had been approximated, the resulting canal for the inlay contained very little cancellated or vascular structure. A sliding graft was made. The immediate skin repair was ideal. In six weeks, the inlay had become loose and acted like a foreign body and had to be removed. The interesting feature was that the surface of the graft appeared

like a superficial necrosis, which consisted of one-half of the original thickness of the compact bone, the cancellated structure had separated. There existed union between the adjusted bone fragments. In the entire inlay bed was a distinct vascular surface. Beginning union was evident but there was great flexibility. The skin was closed and a fenestrated plaster of Paris dressing held the bones in alignment for another six weeks when union had become firm.

Taking these two cases as examples of two common groups, we can assume that the graft in the first one was osteoconductive, it acted as a scaffold for the proliferation of osteoblasts. In the second instance it played the role of an osteogenetic force. Osteoblasts developed from the deeper layer of the graft and the firmer bone became necrotic and were extruded.

Our personal experience seems to have taught that the ideal graft is one that contains all the layers of the wall of a bone shaft, viz., periosteum, epiosteum, dense bone, endosteum and marrow. When such a transplant was laid in a bed that contained like structures, the repair was ideal in nearly 100% of our cases, the inlay had apparently become a part of its new environment. The fate of these grafts seemed to depend on a two-fold function. All the layers except the periosteum were osteogenetic because of the proliferative functions of the osteoblast and also osteoconductive because of the well known fact that the transplanted soft tissues yielded to the invading cellular structure from the periphery of the new bed. Bony union was complete in all cases and the graft became a part of its new location.

We have, however, several groups of cases in which the fate of the graft was not ideal. Perhaps all of us who have had to do with the fixation of fractures have seen our work apparently come to naught by the fracture of the graft. Seldom or never did we see this where the broken surface could be accurately approximated but in that class of cases where there was a loss of osseous structure as in comminuted fractures, we have often been over confident and have sometimes failed to join together similar bone layers or we have used dense and very hard grafts that have been lacking in vascularity, sometimes the interosseous gap has been too long or the ends of the graft were not sufficiently fixed.

We have seen in cases of inadequate coaptation between graft and host bone, a development of granulations with osteogenesis of the coaptated bone surfaces. Absorbtion of lime salts was sometimes rapid causing a porosity of the graft ends particularly in the fifth and sixth weeks. If, at this time there is a lack of ridged immobilization by external splinting, allowing stress and strain on the graft, a fracture may occur near one of its coaptated ends which has been called a "Disintegration Fracture". A fracture may occur when an inlay of soft cancellous bone like a rib has been used even when there is no gap between the broken ends. Not so when a split rib has been used as lateral splints if the split rib is placed between the periosteum and the bone. A rib graft usually fails when used to fill up a gap. Sliding inlays where the bone has become atrophic due to disease should be avoided when firmer bone from elsewhere, which contains all the normal structures of the host bone should be used.

I have had one fracture of a femur inside of a plaster cast when there had been much overlapping in an old fracture, the graft having been implanted under stress due to shortened adductor muscles. In this case, strict immobilization and extension was maintained after the discovery of the fracture resulting in final repair. In another case of fracture of the graft in a tibia prolonged fixation resulted in a useful limb.

We have had more difficulties with bones of the forearm than any other of the long bones. Nearly all of our operative cases were in old ones, there was either overlapping or marked bowing so that muscular contraction was difficult to overcome without sacrificing too much bone. It was difficult to obtain an implant whose layers corresponded with those of the host bone. In several cases the implants taken from the tibia had to be applied under stress, there developed a tendency to lateral bowing of the radius or ulna and sometimes both. In one case a fracture occurred in the graft at the point of maximum stress as soon as it began to soften about the 6th to 8th week. A lateral deformity can not always be prevented in spite of carefully adjusted plaster casts and, yet, osseous union and a useful arm resulted. In all of these cases it appeared imperative to apply the old principle of fixing the joints above and below the fracture. Some of these grafts had become very soft at the time of fracture, a further 6-8 weeks of fixation resulted in hardening. Some of the graft

fractures may be fissure fractures but occasionally they may be complete and very close to the host bone, ending in a typical nonunion, the graft which is devitalized has a firm and rounded end, that portion of the broken graft which is attached to the host bone becomes a part of it and is rounded and hard. In one of our cases of a massive graft filling a gap in a broken tibia, a fracture in the middle of the transplant after union at its ends appeared firm, occurred soon after the patient began to walk. Immobilization with a plaster cast for a period of eight weeks followed by a steel supported boot accurately adjusted to the leg resulted in a useful limb. This transplant which appeared safe could not bear the stress and strain due to deficient recalcification. With an increasing experience, we have seen fewer defective grafts. We are now using heavier transplants. We observe, whenever possible, the necessity of approximating like anatomical structures. We have attempted to follow the exacting technique laid down by Lane for the application of his steel plates. We know that steel contrivances have no inherent immunity, consequently every lapse in aseptic detail is followed by failure. We must not forget that a living bone graft with its active vitality and inherent immunity may suffer the same fate when too freely handled or too severely traumatized. We avoid all digital contact with the graft and the host bone, that part of instruments which come in contact with the wound are not touched with the fingers. We think we have observed that an osteoporosis and more or less softening develops in all of our grafts, due to the vascular rearrangements and absorption of lime salts, consequently the time for union in many of our cases is doubled.

When we consider the fate of the bone graft, the question arises, is a graft osteo-conductive or is it osteogenetic? I am satisfied that it performs the function of both. When we see a graft become osteoporotic, we must admit that a part of the graft has become absorbed and when we later see the graft has assumed a condition of a firm weight supporting structure, we must also admit that the disintegrated bone invited the invasion of new structure from the host bone as well as an osteogenetic process from the graft itself.

We have further observed that in an inlay graft, whether the broken fragments are accurately approximated or whether the graft fills a gap, a fissure or transverse fracture may occur near the end of the host bone or near the middle of the transplant at about the fifth to the eighth week and when the transplant is undergoing an increasing vascularity with loss of lime salts, we must concede that the graft is acting partly as a scaffolding for the formation of new bone both from itself and from the host bone. This process probably is not complete until finally the graft loses its identity and disappears and becomes a part of the host bone.

Keeping in mind these changes, we have maintained immobilization for a longer period. We have of late in most cases used autogenous grafts. Some of our failures have been in cases of homoencous grafts in spite of the most careful asepsis. We have never made use of the suggestion by Gallie to ascertain if the blood of the donor and recipient were sympathetic as is done in blood transfusion. The suggestion seems like a good one and deserves a trial in instances where autogenous grafts are not available.

UNLOCALIZED INTRACRANIAL INJURIES, INDICATIONS FOR SURGICAL TREATMENT.*

BY CURTIS A. EVANS, A. B., M. D., F. A. C. S.

MILWAUKEE.

There is no satisfactory classification of intracranial injuries, but so far as treatment is concerned, they may be described as localized and unlocalized. A localized injury is one in which there is external or neurological findings pointing to the location of the injury. An unlocalized injury is one in which there is evidence of an intracranial injury but no sign or symptom whereby one can definitely determine the location of the injury. A depressed fracture of the vault or a middle meningeal hemorrhage, extensive enough to produce symptoms comes under the classification of a localized injury. In such an injury, the indications for treatment are self evident and the injury presents a special point of surgical approach. This is not the case in an unlocalized injury. If such an injury is associated with a fracture of the base of the skull, it is too often diagnosed and treated from the viewpoint of the

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fracture only and the essential fact is overlooked, namely: that the least important lesion in a fracture of the skull is the fracture itself and the important lesion is the injury to the brain and other cranial contents, produced by the trauma and the resulting circulatory disturbances. If the injury is not associated with a basal fracture, the condition regardless of the profoundness of the symptoms, is too often diagnosed and treated as a "concussion of the brain," a term so loosely employed and so vague in its pathology that it is almost meaningless.

In an unlocalized intracranial injury, it is practically impossible to diagnose the nature, the extent, or the location of the injury, and if treatment is to be placed on a sound basis, it should rest primarily on the question of cerebral compression. It makes no difference whether or not this compression is due to a "concussion," a contusion, a hemorrhage, or an edema, or whether or not there is a fracture. When we diagnose and treat these unlocalized injuries according to the degree of cerebral compression, our diagnosis and treatment is placed on a pathological and physiological basis. The immediate and ultimate outcome of the case will depend on our being able to determine the amount of this pressure and the ability of the brain to withstand it, and also upon the measures we adopt towards the relief of this pressure.

It is impossible to treat properly an intracranial injury unless one has an understanding of the effects of cerebral compression. The brain is subject to the same types of injuries as others tissues and an injury to the brain, like an injury to any other part of the body, is followed by the same process of reaction to injury. We have always recognized the importance of the part played by this process of reaction in injuries to other parts of the body, but have too often failed to recognize its importance in head injuries, where, for very obvious reasons, it should receive the foremost consideration. The skull is a tightly closed box completely filled by the brain, its membranes, blood vessels, and cerebrospinal fluid. The bones of the skull, except in the infant, can not yield; the brain itself is incompressible, so the cerebro-spinal fluid and the products which are the result of the process of reaction to injury cause pressure on the vessels and the circulation is disturbed. The compressing agency may be so slight that the increase may be compensated for by a displacement of the cerebro-spinal fluid and by a compression of the veins with so slight an obstruction as to produce no symptoms. If the process does not stop at this stage, we get a venous engorgement with an increase of fluid in the cerebro-spinal spaces and clinically we may have slight headache and some mental dullness. As the hemorrhage or edema increases the pressure on the veins also increases and there is an interference with capillary circulation and clinically we have an increasing headache, restlessness, irritability, dizziness, and perhaps delirium. As compression further increases, we get an interference with medullary circulation and the resulting struggle between intracranial pressure and blood pressure. The increasing intracranial pressure deprives the medulla of its proper blood supply and so stimulates the circulatory center to meet the demands made upon it. This results in a slowing of the pulse, constriction of the splanchnic vessels, and a rise in blood pressure. During the struggle between intracranial pressure and blood pressure there is an "up wave" and a "down wave" in the general condition of the patient, as shown by changes in the mental condition, pulse, respiration, reflexes, and blood pressure. There is, however a limit to the ability of the circulatory center to combat the increasing-intracranial pressure and when this limit is reached circulatory failure occurs, and there is a rapid pulse, deep stupor, and decreasing blood pressure. This is the terminal stage of compression and it means death. This is the fight the brain puts up in this closed box, the skull, and because it is out of sight it is too often out of mind. Why not treat the brain as we would any other part of the body under like circumstances? What would happen to a severely contused foot with the arterial supply pressed upon by blood and serum if multiple incisions were not made to relieve the pressure? Or what would happen to a rapidly swelling extremity if a too tight plaster dressing were applied and not cut to relieve the tension? It might result in death of the extremity or permanent disability without death. If signs of tension should be looked for and relief from tension is indicated in injuries to other parts of the body, then surely, it should be looked for and if necessary relieved in intracranial injuries. Failure to relieve this pressure may not result in death of the patient, but it may, and too often

does, result in permanent disability. Duret showed experimentally in animals that a diminution of 5 percent in the intracranial capacity produced somnolence, and a diminution of 8 per cent caused death.

The treatment of unlocalized intracranial injuries becomes a question of relief of intracranial presure. This can best be accomplished by the split muscle subtemporal decompression and drainage operation after the method of Cushing. The advantages of this approach and the technic of the operation are so well known that I will not take time to review them and there is no doubt that if surgical intervention is indicated Cushing's operation is the operation of choice. It then becomes a question as to whether or not surgical intervention is indicated. In discussing this question, we must bear in mind the physiological changes associated with an intracranial injury. That the process following such an injury is a space restricting process and that this space restriction produces an interference with the circulation and that this tends to bring about an anemia of the vital centers and death. Treatment then must be directed toward a relief from pressure and this operation accomplishes this in two ways: first, by draining away the cause of this space restriction, whether it be cerebro-spinal fluid or blood; and second, by the removal of a portion of bone and dura from the subtemporal region allowing for a certain amount of expansion of the brain. All this aids in bringing about absorption and a return of the circulation to normal. The operation is one for the open treatment of intracranial pressure and not one for the open treatment of fractures of the skull. The operation, however, is not always indicated and should not be used as a routine. For instance, the injury itself may afford sufficient relief from pressure as is seen in basal fractures with a free discharge of cerebro-spinal fluid and blood from the nose, ears, or mouth. This free discharge often is so great as to cause one to wonder what chance the patient would have had if there had been no outlet for drainage, due to the trauma. Again, repeated lumbar punctures may afford sufficient relief from pressure, for the subarachnoid space of the brain is continuous with that of the cord. But if this fluid is bloody and under great pressure the results from lumbar puncture are not satisfactory a basal drainage should be done. Again, because of the non-severity of the injury, the brain can take care of its own process of reaction and repair.

It may be asked what are the indications for surgical intervention in an unlocalized intracranial injury. This question may be answered in part by giving two contra-indications: the first is shock, as shown by a rapid pulse, low blood pressure, and subnormal temperature; and the second is the stage of medullary failure, as shown by a rapid irregular pulse, low blood pressure, deep stupor, muscular relaxation, and a rapid irregular respiration. It may, especially at once after the injury, be difficult to differentiate shock from medullary failure,, but in either case, operation is contra-indicated and surgical intervention in such cases has been largely responsible for the high mortality.

The question of surgical intervention must be considered from two view points: the saving of life and the prevention of future complications. The picture of intracranial pressure is not always clear cut. There are certain signs and symptoms which aid us in determining the presence of and the amount of this pressure, but there is no sign or symptom which is always dependable. For this reason every sign and symptom that has to do with intracranial pressure must be reckoned with, and these can be properly interpreted only after a careful, and if necessary, an often repeated examination of each case. Many of these signs and symptoms are of but slight value, others are of the greatest value. Among the latter, I would place the mental condition, the condition of the eye grounds, the findings by a lumbar puncture, and severe headache. Conscious of the fact that each case must be considered by itself, I would, in a general way, place the following as indications for operation: 1. Profound primary unconsciousness accompanied by marked signs of a severe intracranial injury, such as muscular relaxation, slow pulse, high blood pressure, fixed pupils, Cheye-Stokes respiration, high or subnormal temperature, and increased pressure as shown by a lumbar puncture. This is the period of "up wave" in the stage of medullary compression. Such a case is practically always fatal whether operated on or not, and each case must be left to the individual judgement of the surgeon. My

result in one case leads me to believe that an occasional one might be saved by an early operation. No anaesthesia is necessary in such a case. 2. Primary unconsciousness or stupor lasting hours, in conjunction with any other reliable sign of increased pressure, such as changes in the eye grounds, slow pulse and increased blood pressure, snoring respiration, increased pressure as shown by lumbar puncture, et cetera. 3. Primary unconsciousness in conjunction with a lumbar puncture showing increased pressure and a bloody fluid. These cases, if left alone, often have future complications. 4. Primary unconsciousness suddenly or progressively deepening, with or without a bloody fluid or choked disc. 5. A lucid interval followed by unconsciousness. 6. Severe headache, perhaps requiring Morphia, especiallly if there is a choked disc or increased blood pressure. This condition often follows the so-called closed fractures, where there has been no escape of fluid and no unconsciousness.

Every stage of cerebral compression is characterized by some form of mental disturbance. This varies from a slight mental dulness to a deep stupor. I feel that the mental condition of the patient is not given the prominent place it deserves as a guide to treatment and as an aid to diagnosis in intracranial injuries. Primary unconsciousness, unless prolonged, is not of much significance, but if prolonged it becomes of the greatest significance. Secondary unconsciousness following a free interval is also of importance and is produced by some form of intracranial hemorrhage or edema. In a series of 307 cases of basal fracture, at the Boston City Hospital, where an observation of the mental condition was noted on admission, 168 were unconscious, 58 conscious, and the remaining 81 were in a sluggish or dazed mental condition. Of those conscious on admission 13 percent died, unconscious 51 percent, and in dazed condition 50 percent.

I feel that a spinal puncture should be more frequently used in cases where an intracranial injury is suspected. This procedure is a reliable aid in determining the amount of intracranial pressure, the nature of the injury, and is, occasionally, an aid in treatment. The presence of blood in the spinal fluid is a sign of intradural hemorrhage and this finding alone may prevent such a condition from being diagnosed and treated as a case of delirium tremens or alcoholic intoxication. A spinal puncture, however, should be used with caution because of the possibility of herniation of the medulla into the foramen magnum. The greater the pressure, as shown by a lumbar puncture, the greater is the danger of this herniation. The purpose of a spinal puncture is not to determine how much spinal fluid can be drawn. In order to obtain the maximum value from a spinal puncture, the amount of pressure should be registered by means of the spinal mercurial manometer.

I am not inclined to give to a choked disc, taken by itself, the prominence it is usually given as an aid in the diagnosis and treatment of intracranial pressure due to trauma. I believe it is just one of the elements in making a diagnosis and one of the indications for operative treatment. Its absence should not deter us from operating and its presence, in itself, is not a sufficient indication for operation. In order to obtain the true value of an examination of the eye grounds, they should be examined at frequent intervals and proper attention should be paid to the tortuosity and fulness of the retinal veins, the hyperaemia of the discs, and beginning edema of the nasal halves. In acute cases, that is, during the first twenty-four hours, it is the exception to find a definite choked disc, even with a greatly increased intracranial pressure. After this time, the value gained by an examination of the disc increases and continues to increase with time. In my experience no definite relation has been found to exist between an unlocalized injury and the general arterial blood pressure. The exceptions have been in the so-called closed fractures. For the first few hours after an injury, it is the rule to find the blood pressure below normal. If the pressure continues to fall a fatal termination is to be expected. I have also found no definite relation between the pulse and an unlocalized injury. A slow pulse, the same as an increased blood pressure, when present, is an indication of increased intracranial pressure, but in my unlocalized injuries, I have found the pulse to be over 80 in 80 percent of the cases. A slow pulse, by itself, is not a sufficient indication for an operation. The pulse and blood pressure are, however, a good guide as to the fight being put up in the stage of interference with medullary cirulation. In a case with rapid or increasing pulse rate immediately after the injury, and especiaaly if there is also a

low blood pressure, operation should be delayed until the pulse rate is lowered and the blood pressure raised. This is due to shock and should be treated as such. But, on the contrary, a gradually increasing pulse rate, and lowering of blood pressure, coming on some hours after the injury is, if anything an indication for operation. The same applies to temperature, an increasing temperature, appearing some hours after the injury, and not due to some other condition, is an indication for operation. A high primary temperature of 102 or above gives a bad prognosis. The height of the temperature is largely dependent upon the extent of the brain injury, regardless of the part of the brain involved. I have noticed, in head injuries, that the pupillary findings are usually the first to be observed and that great importance is attached to them. They are far from deserving the prominent place they seem to hold and are perhaps the least important of all findings.

During the past twelve years, I have done a subtemporal decompression drainage operation on over one hundred cases of unlocalized intracranial injuries, not, however, as a routine procedure, but only in those cases where I felt it was indicated to save life or to prevent future complications, and when in doubt, the operation was performed. As to the value of this operation in reducing the mortality, it is impossible to draw any definite statistical conclusions. There is no way of telling how many of these cases would have recovered, as far as life is concerned, without the operation. Nor can one tell how many of those who died following operation might have lived if not submitted to operation. I feel, however, that the findings justified the operation in each case and that no death could be traced directly to the operation. The majority of my cases have been associated with a basal fracture. Statistics, from various hospitals, show that the average mortality following such injuries, without operation, is from 50 to 60 percent. Basing my results on these statistics, I feel that, with operation, there is a redution in mortality of about 20 percent.

The saving of life, however, is not the only consideration in the treatment of these injuries by the relief of intracranial pressure for we must use every effort to guard against the remote possibilities of the injury. John B. Murphy, speaking of skull fracture has said, "the injuries with a compound or depressed fracture are the least injurious, that is, where the edge of a sharp instrument or bone penetrates the brain; if there is recovery from the immediate effects, you rarely have any subsequent trouble. But the blows that produce unconsciousness, with or without fracture, never leave the patient free from danger of cerebral complications." Bloodgood in 1910 said, "up to the present time I have been unable to find any case of epilepsy following an injury to the skull in which some piece of the skull was removed, either by operation or the injury itself. This would substantiate the view that epilepsy is more apt to be started up by changes in pressure than by actual injury." The above statements, even though there may be many exceptions, are surely arguments for a decompression drainage operation. If a decompression performed by the injury itself lessons the chances of subsequent trouble, then surely, a subtemporal removal of bone and dura with drainage should give the greatest assurance possible for a favorable ultimate outcome. I have no hesitancy in stating that the relief of intracranial pressure, by the above operation, does lessen the occurrence of post traumatic symptoms, such as headache, dizziness, irritability, changes in disposition, inability to stand the effects of heat, et cetera.

From my experience with this operation, I have learned some points that I deem worthy of mention. One is that where there is an open fracture of the vault with an uninjured dura and evidence of a subdural hemorrhage, in order to prevent the chances of infection, it is more advisable to open the dura and deal with the clot through a subtemporal operation than through an opening in the dura, at the site of the external injury. If there is an associated middle meningeal hemorrhage, this vessel can almost always be ligated and the clot removed through the subtemporal opening and I would suggest this approach as the one of choice in middle meningeal hemorrhage. An unlocalized injury often accompanies a localized injury and to effect a cure in such a case it is necessary to deal with both injuries. There is no reliable guide as to which side of the skull will reveal the greater indication for opening. In the majority of my cases where a double decompression was done, the findings were greater on the side opposite to the external impact. If the abdominal reflex is absent on one side, it is a mark-

ed indication that the lesion is on the opposite side. The eye findings are not a reliable guide as to which side should be opened, as the greater pressure is often on the side opposite to the disc showing the more marked choking. If the findings at operation on one side are not sufficient to account for the symptoms or if there is not improvement, the opposite side should also be opened. The time of operation is important. The sooner after the injury the patient's condition permits an operation, the better the prognosis. When compression has reached the terminal stage, the operation is rarely of any avail. A "decompression" without opening the dura is not a decompression and is of no use. The larger the decompression, the better the results. A decompression alone is not sufficient and a basal drainage must be done, and to insert the drain the base of the brain should be raised. It is often not until this is done that the basal clots appear. If the mental condition will permit, the operation can be done under local anaesthesia.

I do not wish to be understood as advocating surgical intervention in every case of unlocalized intracranial injury, but only in those cases where relief from pressure is indicated, either to save life or to prevent future complications. There is a large percentage of intracranial injuries that are primarily fatal, where the mortality can not be reduced with or without an operation. There are cases where the patient will recover whether operated on or not, either because of the non-severity of the injury, or because of relief from pressure afforded by the injury itself, or by a lumbar puncture, repeated if indicated; some of these will recover completely, others with cerebral complications, that might have been prevented by an operation. And there is a certain percentage, about 20 percent, that will recover only after surgical intervention, some recovering after a decompression with drainage on one side, others only after a bilateral operation.

CANCER OF TONGUE.

Evidence is submitted by Joseph Colt Bloodgood, Baltimore (*Journal A. M. A.*, Oct. 29, 1921) which he asserts seems to prove that cancer of the tongue is largely a preventable disease. The study of the ultimate results in cancer of the tongue shows that, after five years, 62 per cent of the patients with early malignant cancer are well, and 12 per cent of those with advanced cancer, while all those with hopeless and inoperable cancer are dead. The total operative mortality of the early malignant cases is 5 per cent, and of the advanced cases is 30 per cent. Delay in proper treatment after the onset of the malignant lesion reduces the chances of cure in operable cases from 62 to 12 per cent, and increases the chances of postoperative death from 5 to 30 per cent. Further delay means an inoperable condition for which, at present, we have no treatment that promises a cure. The educational propaganda has therefore increased the number of operable cases from 53 to 80 per cent and decreased the number of hopeless and inoperable cases from 47 to 20 per cent. Men who develop cancer of the tongue have been warned by definite local lesions. There is, first, the warning from a lesion that is not cancer. These precancerous lesions are leukoplakia, bad teeth, areas of irritation, ulcers, syphilitic gummas, warts, fibromas and smoker's burns. If the man seeks and obtains good advice, he should be protected from cancer. Improvement in the cure of cancer of the tongue, Bloodgood says, is very much the same problem as in appendicitis. Failure to cure appendicitis is not the fault of treatment of peritonitis and abscess, but is the result of failure to instruct the public and medical profession how to recognize appendicitis before abscess formation or peritonitis sets in. A study of 265 lesions of the tongue in men and thirty-three in women convinces Bloodgood that the only hope of decreasing the deaths from cancer depends on educational propaganda among the public and the profession. Among 160 cases of cancer of the tongue, it is distinctly stated in the history in only two cases, that the man did not use tobacco in any form. In the few cases of cancer of the tongue in women, the patients have used tobacco, usually in the form of snuff by the mouth. The striking feature is the excess, not the form, the constant presence of tobacco juice in the mouth, and careless smoking, so that there is repeated burning of some one area, producing either an area of irritation, or a definite burn, or leukoplakia. It seems quite reasonable to conclude that men can be educated to use tobacco moderately and in such a manner as to reduce the danger to a minimum, and to be instructed on the warning which would influence them to discontinue, at least temporarily, the use of tobacco in any form. Among 160 cases of cancer of the tongue in men, leukoplakia had been observed by the patient for years before the appearance of cancer in forty-one cases. There were a history of syphilis and a positive Wassermann reaction in nine cases. In the records without a history or evidence of leukoplakia, there is a distinct history of ragged, dirty teeth producing a local area of irritation, present for months or years before the development of cancer, in forty-seven cases. In twelve cases in which there was no definite leukoplakia recorded, the condition which had warned the patients for months or years was a local area of irritation. In forty-three cases, the patients were aware of the presence of a definite local ulcer on the tongue or floor of the mouth for months before the development of cancer. In only one case were the local lesions on the tongue apparently syphilitic in origin, and in this case the cancer developed in a gumma. In four cases the prominent precancerous lesion was a definite wart, present two, ten, one and two years, respectively. In four cases a fibroma was present.

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EDITORIALS

A New Year's Creed

Let me live in a house by the side of
the road
Where the race of men go by—
The men who are good and the men who
are bad,
As good and as bad as I.
I would not sit in the scorner's seat,
Or hurl the cynic's ban.
Let me live in a house by the side of
the road
And be a friend of man.

—*Sam Walter Foss.*

SIDNEY S. HALL.

ON January first, Sidney S. Hall of Ripon assumed the office of President of this Association. There is no more beloved man in Wisconsin than Doctor Hall and he needs no introduction to the members of the profession, for he has served as treasurer of this association for a quarter of a century.

It was the Editor's intention to publish in this issue a biographical sketch of Doctor Hall and, to gain the necessary information, a questionnaire was submitted to him which his modesty made him decline to answer. He hinted, too, in his reply an objection to some of the questions asked. In reply to a request for something for the Journal, he sent in the following:

"About sixty years ago, in the winter of 1863-64, when I was a medical student at the University of Michigan, Moses Gunn, then living at Detroit, was the Professor of Surgery. He came to Ann Arbor on Wednesdays and Saturdays, giving two lectures on each day.

At one of Dr. Gunn's lectures we had a visit from Louis Aggasiz, then Professor of Natural History and Geology at Harvard University.

He sat quietly through the hour's lecture and after a request from the class to address us he made a very short speech.

What he said fits so well to what I would like to say, that I will repeat his words in full. He said, in his broken English, "Gentlemen: sitting here on these hard benches and listening to a medical lecture reminds me of the time when I also sat on similar hard benches and listened to similar lectures. I am very glad to have been rejuvinated among you."

Again in 1867, I sat on a bench and heard Professor Aggasiz give the graduation address to our class, at the Harvard Medical School.

He especially advised us, during the time that we were waiting for practise to arrive, to study the

natural sciences, as that would better fit us for future work."

UNITED STATES PUBLIC HEALTH SERVICE.

A BILL now before committees of both houses of Congress provides for some much needed changes in the personnel of the Public Health Service. No general legislation providing for the reorganization of the public health service has been enacted since 1889, the legislation affecting the service in this particular having been fragmentary in character and enacted, not with a view of establishing any permanent policy, but to meet the situations as they arose.

In view of the immense and still growing importance of public health work, the need of placing it on a sound and sure footing should appeal to all concerned. It is hardly necessary to remind the medical profession of the immense amount of new work which has been loaded on this department in the past three or four years. The merchant marine has increased three fold. The work in connection with the Veterans' Bureau in the care of ex-service men involves several millions of men. The quarantine functions of the public health service have largely increased. The enactment of recent legislation with respect to immigration and prevention of disease have widened the activities of the department in the general prevention of disease and have added enormously to the duties of the department.

The expansion which has affected the service is not merely temporary in character and the service is struggling on under legislation which is utterly inadequate to meet the situation. Nearly nine hundred medical officers are being asked to continue their service as reserve officers, with all the uncertainity which inevitably accompanies such an appointment. Such conditions will not and can not attract or hold the type of medical man the service should have.

In order to meet the situation in a satisfactory way legislation is necessary which will accomplish the following:

1. Provide for the immediate enlargement of the regular corps to meet current needs by taking into the Public Health Service as regular commissioned officers after a suitable examination at a grade commensurate with their qualifications, reserve officers now on duty with the Public Health Service who have shown themselves to be suitable by their qualifications and efficiency.

2. Permit the injection of new blood into the Service as required to replace those retiring from active duty because of physical disabilities.

3. Permit the admission to the regular corps of the Public Health Service of sanitary engineers, scientists, and other personnel whose services are indispensable in public health work and must constitute a permanent feature of a public health corps.

4. Place the officers of the regular corps of the Public Health Service upon the same status with respect to promotions according to length of service, pay and allowances, and provisions for retirement as is current in other Government medical services.

It is believed that the draft of the bill proposed accomplishes these purposes in a satisfactory way.

This bill has been introduced in the 67th Congress as Senate Bill No. 2764. It is deserving of the whole-hearted support of the medical profession.

THE NURSING PROBLEM

DR. CHARLES H. MAYO, *Pictorial Review* for October, 1921, in speaking of the nurses' trust and after arguing the advantages given the nurses by the modern system of nursing education says:

"In return for these she should give the very best service of which she is capable. When her period of training is over she should step into her profession with the same high impulse. She should expect fair wages, a chance to enjoy freely the best that life has to give, and the acknowledgment by the public mind of the dignity and distinction of her place in society. But she must not become exorbitant—and this is the threat which looms not a comfortable distance away. Seven dollars a day for an eight hour day is more than exorbitant; it is prohibitive. It means that in cases of dangerous disease where constant skilful care and watching are necessary to save the life of the patients, three nurses must be employed at a daily cost of twenty-one dollars a day. How, I ask, can the man and woman of average means afford to pay such charges? They can not do it.

Neither can the hospitals if they wish to keep open their doors.

As things are now, in the larger cities of the East, only the very rich or the very poor can receive proper treatment and care for their sick. The very rich can pay for it; the very poor get the best of care for nothing. The most skilful surgeons and physicians are always to be found on the staffs of charity hospitals. Out of this a great danger threatens. If the present prohibitive cost of sickness for the middle-class man continues, he will be driven to pauperize himself, and nothing is so disintegrating to human integrity as pauperization. It lessens self-respect and tears down the tissues of self-reliance and self-determination. Can you think of a more disheartening predicament for a hard-working, right-living man, when there is sickness in his family, than to have to declare himself a pauper in order to be admitted to the free ward of a hospital? And yet this is often necessary where the pay wards ask a larger fee than he can afford. It is a peculiar alinement, too, putting, as it does, a bonus upon indigence—for the idle and useless, making no contribution toward the general good, get the best of care for nothing, while the industrious, who contribute toward the better standing of their community, and who could pay a reasonable fee, must go without or be classed as paupers.

"It is for this reason that I do not believe in free care for the sick. As economic conditions are at present, common humaneness makes it necessary. Most men can pay something. If it is only a dollar, they at least are given a chance to retain their self-respect through the knowledge that they are doing the best they can. And when they are cured and on their feet they can make the effort to pay more. There will always be the destitute, and they, of course, are public charges and their care should fall upon the public.

"For the sake of better analysis and emphasis I must revert to the sub-nurse. This is a title that does not sound good to my ears, for I think it superfluous and unnecessary. The term nurse should be inclusive. The proper adjustment lies not in nurses and sub-nurses, but in a modified, uniform law setting the standard for training and registry at two years' high-school education and two years' general hospital work. Then for the ambitious there could be special graduate courses in higher nursing, such as X-ray and radium work, anesthesia, public health work, et cetera. But since there is some question of States' rights, we will have to call the two-year girl the sub-nurse. I am sure that the country districts and smaller cities could easily muster 100,000 such high-minded girls, who would gladly make their vocation the answer to this great national need.

"And here I take up again the virtue of service. Good nurses are born. They are not made, any more than good stenographers or good writers or good lawyers are made. Education helps, but if a girl has all the education in the world and the best of secretarial training, and yet lacks manual dexterity and sound business sense, she will not make a good stenographer. All the training in the world will not make a good nurse of a girl who is always thinking about herself and whose heart does not go out toward suffering humanity in a desire to ease that pain by self-sacrificing service."

WISCONSIN SURGICAL ASSOCIATION.

THE annual clinical session of the Wisconsin Surgical Association will be held in Milwaukee on Wednesday and Thursday, April 12 and 13.

The meeting held in Marshfield last year was a most successful one. The program presented was most attractive and lively interest was taken in the activities of the Association. The program committee expects to make the coming meeting of great interest to you. Mark these dates on your calendar and decide that you will not miss the meeting.

The preliminary program and further notices will be published in the next Journal.

AS OTHERS SEE US.

(*Editorials from the Lay Press.*)

MODERN SURGERY.

By H. Addington Bruce.

Twenty years ago, a lady of my acquaintance had to undergo an operation for a fibroid tumor. It was only a small fibroid, and the surgeon operating ranked high in his profession.

Nevertheless, convalescence was slow and painful. Post-operative complications kept the

patient abed for many weeks. And, as the event proved, the operation had not been quite as thorough as it should have been. For ten years later, symptoms developed indicating that another fibrous growth had appeared in the same organ. Various reasons led the attending physician to deem operation inadvisable, and in this opinion sundry other medical men concurred.

The expectation—at all events, the hope—was that on middle life being reached the fibroid would cease giving any trouble. This expectation was not realized. On the contrary, after a long period of quiescence, the growth became markedly enlarged. And now, when resort was once more made to the operating room, it was found that an extensive condition of disease was present.

Not only was a seven-pound fibroid to be reckoned with, but the gall-bladder was badly infected, the appendix seriously diseased, and there was an intestinal "kinking."

The surgeon who on this occasion had the case in charge did not hesitate. The "kink" was straightened, the fibroid, appendix and gall-bladder were removed, two large incisions being necessary. That is to say, an operation far more extensive than the first was performed, when the patient was nearly twenty years older.

One would naturally expect convalescence to have been both more difficult and more protracted. Actually the patient within less than a month was able to walk unassisted to the automobile that took her home from the hospital.

Nothing, it seems to me, could illustrate more impressively the marvelous progress of surgery during the last few years. Formerly sepsis was one of the overhanging menaces of operations. Today it is rare. Formerly post-operative pains and discomforts of an extreme sort were looked for as well-nigh inevitable. Today surgical technique is able in a marked degree to avert these.

So that the decision, "You will have to be operated upon," need not, and should not, be deemed equivalent to "You must suffer martyrdom and then may not survive." To deem it thus equivalent is, indeed, to increase the operative risk. Whenever fear rules, the vital powers are lessened.

Foolish especially are they who, informed that they have a developing cancer which only surgical intervention can cure, hesitate from a mistaken dread of the suffering surgery may impose on them.

Plucking up their courage, facing the surgical ordeal bravely, they are likely to find it infinitely less taxing than they had imagined. And the chances are all in favor of their life being prolonged as could not be the case if they gave the surgeon no chance to check the cancerous growth that has attacked them.—The Milwaukee Journal.

THE GREATEST EPIDEMIC YET.

The country is face to face with one of the worst epidemics of its history. We believe it will in fact be the very worst, that in the number of victims at least it will far outstrip the wave of influenza which swept the country three years ago. It will start in all portions of the country simultaneously and spread in every direction. The contagion will be irresistible and doctors will be powerless to stem it; indeed, they will add to its virulency and will even take pleasure in aiding and abetting the ailment which is about to lay hold of the people in new and insidious form.

The first symptoms of this strange malady are sneezing, violent pains in the stomach, excessive dryness of the throat. There may or may not be fever, that will depend upon the condition of the throat. There will be certain failures of the brain to function normally, and the victim will act queerly. The physician will recognize the symptoms immediately and the diagnosis will be complete. All that will be necessary is to look at the patient's tongue which will be hanging out, and he will utter deep gutteral sounds.

The physician will without asking questions turn to his desk and write the necessary prescription. It will call for one "case" or one or more "bottles" to be taken as often and as copiously as is necessary to relieve the dryness in the patient's throat and pains in the stomach. The epidemic is already in the air. It will afflict millions. No one will escape it unless he puts himself in a heroic attitude mentally. Physical fitness is no protection. On the contrary, it is liable to accentuate the attack. All this we have on the authority of Secretary of the Treasury Mellon.—The Green Bay Gazette.

VACCINATION PROVES ITS VALUE.

The experience of Green Bay furnishes a strong endorsement of the plan of systematic vaccination as a safeguard against smallpox. In the

face of considerable opposition, a persistent vaccination campaign has been carried on in that city during the past year and the records show that more than 4,000 persons have been vaccinated. The result, according to the supervisor of the local health center, is that "for the first time in many years there is not a single case of smallpox listed on the records of the health department with the approach of winter."

Sporadic cases of smallpox are common in many Wisconsin cities at the present time, and this is a common experience with the return of the cold weather season. Modern methods and strict supervision have done much to abate this evil, however, and one seldom hears these days of an old-fashioned epidemic of this disease. Vaccination unquestionably has played an important part in this improvement, and much of the old opposition to this plan has been overcome as the people have noted the improved conditions. Green Bay certainly is to be congratulated for its showing of comparative immunity, gained through persistent effort to control smallpox and prevent its spread. And other places can do as well, of course, by following the same system of intelligent effort and supervision.—The Oshkosh Northwestern.

THE JOURNAL CLINIC

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CLINIC OF DR. L. M. WARFIELD AT THE MILWAUKEE COUNTY HOSPITAL.

F. T., aged 64, a married man, a patternmaker by trade, was brought to the Milwaukee County Hospital on the 17th of October, 1920. On admission he was found to be irrational and apparently deaf. He babbled things which were not understood; although he came in with a diagnosis of a morphine addict, he did not impress one as being a victim of morphine. He seemed to have pain in the left hip and showed that he was ravenously hungry. He was given food at once, which he hastily devoured, after which he became quiet.

No history was ever obtained from him, owing largely to his inability to hear and the contradictory character of answers to questions.

The most definite complaint which he seemed to have was pain in the left hip, but for how long he had had that, we were never able to determine.

On physical examination, he was a much emaciated man with a large, bony framework. The pupils were equal and reacted to light and accommodation. There was no nystagmus. His teeth were in poor condition. There was no discharge from his ears. There were no palpable lymph glands. Accurate examination of the chest was not possible. There was some dullness on percussion over the upper right chest down to the third rib, with some crepitant rales during inspiration. Otherwise, nothing else was made out. The heart was in the normal position, normal in size, there were no murmurs. The liver and spleen were not palpable; the abdomen was somewhat retracted. There was incontinence of both urine and feces. The right leg was normal. There seemed to be severe pain in the left hip which extended to the knee. There was pain on pressure in the hip region over the greater trochanter. Reflexes were present normally. Blood pressure was 120/65.

The urine was negative, the Wasserman reaction was negative. No blood examination was made, as the pulse and temperature were perfectly normal, and no evidence of any blood disease was suggested by the examination.

An X-ray picture of the hip joint and upper femur was made but nothing abnormal was found.

On account of the pain, it was necessary at times to give the patient morphine. We did not determine then from what the patient was suffering.

He was put in extension with Thomas splint and seemed to feel somewhat better, and on the 26th of November a note was made that he seemed to be somewhat improved. At that time, his temperature and pulse were still normal.

On the 30th of November he developed painful urination with blood-tinged urine and examination then showed blood, pus cells, and bacteria. Cystitis was diagnosed. He was catheterized and in a few days this condition disappeared.

Later the cystitis returned. Cystoscopic examination showed residual urine of 450 c.c. The prostrate was of normal size. The urine contained pus and blood. The bladder wall was severely inflamed, with pus and blood clinging to the mucous membrane. In some places the membrane was eroded. His condition after this did not improve in spite of catheterization and instillation of antiseptics, so that on December 18th a suprapubic cystotomy was done and drainage was made through the wound.

By January 29th, 1921, the tube had been removed and he was passing some urine from the urethra. He was up and around in a wheel chair and seemed to be improved.

We were at a loss to account for his acute cystitis with blood, as the bacteriological examination did not show tubercle bacilli.

His ability to pass urine by urethra did not continue, so that on March 23rd a permanent catherer was inserted into the bladder. He complained continually of pain in the hips and continually asked for morphine.

On April 2nd note was made that the suprapubic wound was open and draining urine. The wound had to be dressed daily. Cultures from the wound showed a streptococcus pyogenes. As he was not doing any better, he was again seen by the urologist, who attempted

to pass a cystoscope. A large mass was encountered just at the bladder opening, which pushed against the posterior wall from left to right, so that the beak of the cystoscope could not be elevated enough to see the urethral openings.

He had considerable swelling in his left groin. He complained bitterly of pain in the hip when put in the cystoscopic position.

Although he had a permanent catheter, there were 180 c.c. of residual urine. The prostatic portion of the bladder was apparently normal. There was some congestion of the mucuous membrane of the whole bladder. Rectal examination was said to be negative.

By June 5th the suprapubic wound had permanently closed. He was still complaining of pain in the hip. There had been a little fever during April and May, when he was having the cystitis and the suprapubic dressings. He continued to be irrigated.

He was up and around the ward, with normal temperature, when on the 25th of September the intern noticed that he was very restless, much worse than he had been. He complained that the catheter was blocked and a clean catheter was inserted. He expectorated some blood.

Owing to a great shortage of help, patients with continuously normal temperatures had not had their temperatures taken regularly. The nurse noticed this man's skin to be unusually hot, found the rectal temperature 105.2° F. The lungs were examined. It was found that the whole left side was absolutely flat, with increased vocal fremitus and distant bronchial breathing throughout. The right side was hyperresonant. Eight hundred centimeters of clear yellow fluid were aspirated, which showed a specific gravity of 1027, a predominance of small lymphocytes, and cultures were sterile. His temperature dropped slightly but he was at this time an ill man. In spite of this, he got up in a wheel chair and went out on the porch.

Examination of the chest after aspiration showed that the percussion note was impaired as far up as the fifth rib in front. During the evening of the 26th, his temperature gradually rose. His general condition became distinctly worse, respiration and pulse increased in rate, and early on the morning of the 27th he died. Temperature just before death was 106.2° F.

Post Mortem examination was made within twenty-four hours of death.

On opening the pleural cavity, the left thorax was almost completely filled with straw-colored fluid in which were a few flakes of fibrin. The left lung was collapsed up against the spine. The surface was covered with a thick gelatinous, yellowish exudate. The parietal pleura was also covered, especially in the lower two-thirds and on the diaphragmatic surface by a yellowish, gelatinous exudate.

The heart was pushed over to the right.

The right lung was voluminous and, except for a few easily torn tags of adhesion at the apex, was free in the cavity.

Cut section of the left lung showed it to be perfectly airless, dark grayish in color, with strands of fibrous tissue running through it and speckled with coal pigment. The pleura was about one mm. thick.

The right lung surface was everywhere smooth and glistening. On cut section, the lung presented a perfectly normal appearance except at the extreme base, where it was slightly darker, but everywhere was air-containing. There were no scars of old lung lesions and the bronchial glands at the hilum were studded with coal pigment but were nowhere caseous nor was there evidence of anything more than the coal pigment infiltration.

The peritoneal cavity was smooth and glistening over the front of the intestines. Over the liver were a few flakes of fibrin. On the under surface of the right diaphragm, down the posterior surface of both sides of the peritoneal cavity and scattered in the mesentery were small yellowish nodules of from pinhead to 2 mm. size.

The liver was not enlarged and cut section appeared fairly normal except for slight fatty infiltration.

The spleen was slightly enlarged, a trifle softer than normal and cut section showed mild cloudy swelling.

The kidneys were normal in size. Capsules stripped readily. On cut section there was some streaking of the cortex and evidently mild cloudy swelling.

The pelvic lymph glands, especially the left, were much enlarged into a nodular mass, the size of one's fist, which pushed the bladder towards the right. These glands were, for the most part, caseous or actually fluid in their centers. The chain of large scattered caseous glands extended from there along the aorta, up to the diaphragm.

The ilio-psoas muscle of the left side was of a boiled appearance and broke up easily on handling.

Digital exploration of the sacro-iliac joint revealed rough, bare bone and on chiseling into the joint the whole joint was found to be destroyed. Spicules of bone lay in a yellowish cheesy material with the typical appearance of tuberculosis.

The urinary bladder was somewhat thickened, the mucous membrane was nowhere ulcerated but it was full of scattered hemorrhages and the trigone was dull red in color.

The prostate gland apparently was normal. There were no nodules in the testicles and along the spermatic cords.

DISCUSSION.

This case is interesting and important from several standpoints. The man was with us long enough for us to have made some definite diagnosis in regard to pain in his hip. The fact that we could get no satisfactory history rendered the diagnosis somewhat difficult. However, when we look back upon the case in the light of the post mortem findings, it seems that certain things should have been done and symptoms and signs which he presented should have been more carefully considered.

His complaint was all in the hip. A picture of the hipjoint was negative and yet this should not have been considered a complete examination until

the whole pelvis had been carefully rayed for the possibility of sacro-iliac disease. The fact that sacro-iliac tuberculosis is rather uncommon and particularly at the age of this man, was no excuse for not examining the part. When he developed a cystitis with blood, and no cause was found locally, again there should have been some inkling that the cause might have been in the neighboring parts.

Then, when the large mass was found which was pressing upon the bladder, it did not seem to occur to anyone that there was a possibility of a glandular mass in the pelvis.

The sequence of events in this case seems perfectly clear now. This man had sacro-iliac tuberculosis. It was diagnosed before entering the hospital as sciatica, the pain was evidently so acute as to require frequent doses of morphine. He was then entered into the hospital as a morphine addict. His condition seemed to improve while he was at rest in bed, probably due to the partial fixation of the joint. However, the process was evidently advanced and the bladder became infected through contiguity of the broken-down tuberculous glands. These glands became larger and larger until they formed a large tumor mass, described in the history, and the chest condition and peritonitis developed as terminal events from the focus of broken-down glands in the left side of the pelvis.

The case demonstrates the exceeding importance of examination of the whole pelvic girdle, whenever there is continuous pain in and around the hip.

A good X-ray plate of the sacro-iliac joints would, undoubtedly, have shown disease of the left side.

This case demonstrates also that signs and symptoms should be carefully correlated from all angles and that all possibilities should be run to earth in order to make a differential diagnosis. Possibly had we made a diagnosis earlier, this man might not have been cured, still we cannot absolve ourselves from a certain amount of blame for not paying more attention to conditions which should have given us certain leads.

The following most unusual case was under our observation at the Milwaukee County Hospital during the past summer.

An Austrian laborer, 42 years old and married, entered the hospital on June 27th, 1921, with the diagnosis of migraine. His complaint was constant headache localized on the right side of the head and face. He had a temperature of 99.8° F. on admission, pulse 96, and respiration 22. His condition on entrance was that of an acutely ill man. He answered questions very slowly and seemed not to understand always what was said to him, continually putting his hand up to his head and complaining of this violent headache.

The history was finally obtained from him, however, and the family history was negative. He had always been very well. He had had no diseases except possibly "rheumatism" in 1920, which was not severe enough to keep him from work. He had influenza during the 1920 epidemic, during which he was in bed for a month and apparently was very ill. As a child he had a swelling of the glands of the left side of his neck, which were removed by operation. He denied all venereal diseases. His weight remained about the same from year to year. He was not a drinker.

He was very definite that his illness began on June 5th, with an earache "inside the head". His head began to ache then in the region around the eye and he had a sensation of ringing of bells in the right ear. Three days later the ear began to discharge, the ringing became worse, the headache increased, and he finally was sent to the hospital.

On physical examination he was lying in bed quietly but appeared quite ill, with an anxious expression on his face. There was a scar on the left side of the neck and slight discharge from the right ear. The pupils were equal but were not quite regular in shape, reacted to light and accommodation. There was some tendency to horizontal nystagmus. His teeth were in a fearfully dirty condition. The tongue was coated with a heavy white fur. There was some rigidity of the neck and enlarged glands in the anterior triangles. There was marked myoidema over the chest wall; some limitation of motion on the left side of the chest. A slight impairment of the percussion note above and below the left clavicle was noted. There were a few fine crepitant rales on cough. Heart showed no lesions but the sounds were somewhat muffled. The abdomen was quite negative. The reflexes were all normally present and not increased. Urine was negative. Blood Wassermann and spinal fluid Wassermann were both negative.

On July 1st, there was no rigidity of the neck but Kernig's sign was present and, although the temperature had not been high, there was a little fever so that meningitis was seriously considered.

A lumbar puncture was done, and pale, turbid fluid was removed under considerable pressure. There were 132 cells per cubic millimeter, positive globulin, .032% sugar; neutrophiles 68%, lymphocytes 20%, large mononuclear cells 12%. Culture showed absolutely no growth. Culture from the pus in the ear revealed micrococcus pyogenes aureus and bacillus of Hoffman.

X-ray plate taken of the mastoid region showed the mastoid cells apparently negative, with no impairment of the sinuses. We were, naturally, rather surprised at our findings.

The man's condition was not getting worse; in fact, he was slightly improving except for his headache. A

few days later the rigidity of the neck was not so marked, but the Kernig's sign was still present and the spinal puncture was again performed. Pale, turbid fluid was again removed under pressure. Cell count at that time was 60.

On July 4th, his condition was fairly good. He was lying in bed, breathing 24 to the minute; pulse 68; perfectly conscious. He responded to questions but his inability to understand English made it difficult for him to do some things we wished him to do. However, he stuck out his tongue in the median line; moved his arms and legs around and showed equality in the grip of both hands. There was still discharge from the right ear. The neck was still rigid. All the reflexes seemed present and there was a Kernig's sign. It seemed to us at the time that the most probable diagnosis was a cerebellar abscess on the right side or possibly an abscess of the parietal lobe in the neighborhood of the middle ear.

On July 5th, spinal puncture was again done with some slight turbid fluid resulting, but less than the last puncture. Less pressure as well. The meninges were then irrigated with 2% sterile sodium bicarbonate solution. His breathing became labored and rapid. A few minutes later the face became flushed and great beads of perspiration stood out on his forehead. The pulse was 140 and of good quality. These symptoms, however, soon passed away. The cell count at that puncture was 41 per cubic millimeter. Examination of the eye grounds showed absolutely no changes.

On the 11th patient was improving. Stiffness of the neck had disappeared and only a very slight suggestion of the Kernig's sign was present.

Another lumbar puncture on the 13th withdrew perfectly clear fluid with very slight pressure and with a cell count of 32. During all this period, his ear had been treated.

Suddenly, on the 17th, he complained of a throbbing headache and the next day he was unable to close his right eye. He developed a typical right-sided Bell's palsy. Fortunately this did not last very long and by the 3rd of August the nerve was again functioning normally and he was practically free from his headache. Spinal puncture showed no globulin, clear fluid, 14 cells per cubic millimeter.

He was discharged on the 18th, practically well except that he still complained of noises in his right ear.

DISCUSSION.

We were quite astounded at the sequence of events in this unusual case. As far as we could determine this illness started with an ordinary suppurative otitis media. This ruptured and was discharging freely before his admission to the hospital. Possibly the anatomical relationships of the wall of the middle ear cavity and the contiguous brain allowed organisms to pass through and set up an abscess in the cerebellum very near the cisterna magna. Pressure of the abscess must have ruptured into the cisterna allowing the contents to empty into the meninges. Fortunately for him, the organisms died out in this abscess, which, however, had enough irritating influence to produce signs of meningitis.

The rigidity of the neck is, after all, the expression of the irritation by the exudate or irritant at the base of the brain of the upper cervical nerves which control the muscles at the back of the neck.

Our surprise can well be imagined when we removed purulent fluid at the spinal puncture, and we were still more surprised to find pus cells without any bacteria. We surmissed that the abscess must have sterilized itself, broken into the meninges, produced the signs of meningitis by irritating the cervical nerves and gradually was absorbed, for later, by puncture, we got clear spinal fluid with practically normal cell count.

This is the only case in our experience where we felt that we drained a cerebellar abscess by a lumbar puncture. Years ago I saw a case in which the cerebellar abscess had ruptured into the spinal meninges and pus was obtained on spinal puncture, but this man died of a virulent meningitis. Streptococci were grown from the pus.

So far as I can find this is a unique case and demonstrates a rather unusual termination to what is ordinarly a serious complication of middle ear disease.

CLINIC OF PHILIP F. ROGERS, M. D., MILWAUKEE.

Miss M. B. Age 67. Single. A very small woman recently came to me complaining of "rheumatism" in her left elbow which she said she had had continuously for fifteen years. She gives a history of slowly developing, painful swelling just above the elbow which increased in size until it was as big as an orange but did not involve the joint or limit its motion.

Ten years ago, while lifting a heavy pail of water and pouring from it, she sustained a sudden, sharp, severe pain at site of the swelling and the arm dropped helpless at her side. Forearm carried in sling for next two months, after which she began to use it again, compelling it to function by sheer force of will. Although it has always remained a very weak arm, she uses it quite freely, doing all her housework, dressing herself, doing up her hair, can place hand on opposite shoulder or behind her back and can extend arm full length at level of shoulder.

Marked deformity is noted just above the elbow in the performance of all these movements, and lifting and handling of heavy objects is impossible. She also com-

plains of pain in left leg just below knee and pain in the lumbar spine.

Her history reveals that although she has been a hard worker for a woman of her size, she has never been in robust health and, at the age of twenty-five years, had ulcerations about and just above the ankles of both legs for which she was under treatment for about two years.

Examination shows a normal elbow joint with a point of false motion just above it where the humerus can be bent almost to a right angle. No crepitus can be obtained however. Just below the left tibial tubercle there is a doughy tender swelling the size of a silver dollar and irregular white scars are to be found about the lower ends of both tibiae.

Patient says she used to be as "straight as a little soldier", but during the past two years while she was waiting on an invalid sister, doing all the housework and even caring for the furnace, she has gradually become bent over until now she has a marked "round back" in the dorsal region. The lumbar spine is bent sharply forward and her neck gives the appearance of being telescoped into the upper part of her chest.

X-ray films of the humerus show a ragged fracture about which there is the suggestion of a rounded, bony shell, as though the lower end of the bone had been distended in globular fashion until so thin that it had broken under the strain, and there is no evidence of attempted repair. The picture is not suggestive of any particular kind of pathology, unless it be bone cyst.

The radiograph of the shin bone shows a crater-like excavation below tibial tubercle and a somewhat thickened wavy outline to the tibial crest, suggestive of lues.

No pictures of the spine were made and we can only conjecture that some disease process (probably lues) has caused softening and partial absorption (or at least compression) of the vertebral bodies, with resultant backward bowing of the dorsal, and compensatory forward bending of the lumbar regions. The Wasserman test is four plus.

This patient has undoubtedly been luetic from birth but several experts who have examined the films are of two minds as to whether the pathologic fracture is the result of luetic disease or bone cyst, the etiology of which is unknown.

PERIOSTEAL SARCOMA.

ST. JOSEPH'S (MILWAUKEE) MEDICAL AND SURGICAL CLINIC.*

(Operation by Dr. Echols.)

This patient, upon whom I am now about to perform an amputation above the middle of the thigh, presents an unusually interesting history, which may be summarized as follows:

Miss M. B., Hartland, Wis., white, age 14. Family history irrelevant. Aside from ordinary diseases of childhood, has never had any serious illness nor any surgical operation.

Seven weeks ago, while in perfect health, she began having pains in the left leg a little below the knee. No history of injury. Pains were not severe and knee joint not involved. Two weeks later, swelling first noticed below knee. Pain more pronounced at night. Was able to walk to school till 10 days before admission to hospital.

On admission three weeks ago, patient was found to be a well developed and nourished girl of 14 years. Temp. 99.2°; pulse 72. No cough or other constitutional symptoms. Head, neck, and special sense organs neg. Likewise, heart, lungs, and abdomen. The left leg presents a firm, diffuse, tender, non-fluctuating swelling just below the tubercle of the tibia. Circumference of leg at this level was 50% greater than right. Knee joint not affected. X-ray plates showed what appeared to be moderate bone necrosis in the vicinity of the tubercle of the tibia, without appreciable periostitis.

W. B. C., 9400. Urine contained no sugar nor alb.

Although the possibility of neoplasm was considered I must admit that the absence of any history of trauma made it difficult to exclude inflammatory processes from the diagnosis notwithstanding the low white cell count. Accordingly an exploratory incision was made over the center of the swelling on the second day after admission. Through the incision we removed about 20 grams of granulation tissue and bone spicules from the anterior aspect of the upper end of the tibial shaft. This material was submitted to the laboratory for diagnosis, and Dr. Daniel Hopkinson called it a mixed round and spindle-celled sarcoma. The lungs were examined with the X-ray, with negative results.

Amputation was advised, not because it held out the probability of a cure but rather because it appeared the best straw to grasp for. Operation was refused. Meanwhile X-ray treatment in massive doses was instituted under the supervision of Dr. Fortier. The radiation was not limited to the tumor, but included the lungs as well, for the lungs are usually the seat of the earliest metastases.

Meanwhile, the tumor grew rapidly in size and the pain increased, so that the patient had to be kept under the influence of anodynes most of the time.

On account of the well known interest of Dr. Bloodgood in bone tumors, and the vast amount of work he has done in that subject, a section of the tissue removed was sent to him, with a brief clinical history of the patient. After examining the

*Second Thursday of each month.

section submitted to him, Dr. Bloodgood sent the following telegram:-

"Periosteal sarcoma. Advise amputation through femur, leaving enough for artificial limb. Continue X-Ray treatments of lungs after amputation. Not over 4 to 6% cures expected."

The rapid growth of the tumor in the past three weeks and the constant increase of pain have caused the parents to consent to amputation. I feel that we have lost valuable time but still it has never been demonstrated that early amputation in this most malignant form of tumor will produce any large percentage of cures.

You will now note the large size to which this tumor has grown in so short a time. You will also observe the prominence of the superficial veins in the vicinity of the tumor,—a fairly constant and characteristic finding in rapidly growing sarcoma. I also call your attention to this X-ray plate taken three weeks ago when the patient was admitted to the hospital. You will notice that in the upper end of the shaft of the tibia there appears to be a moderate amount of bone necrosis, but no thickening of the periosteum was discernable at the time the plate was made.

I will now proceed to do a circular amputation above the middle of the femur. In the meantime, I will invite Dr. Stratton, who has seen this patient with me, to entertain you with a discussion of bone sarcoma in general, and of this case in

DISCUSSION

This patient appeared well up to a few weeks ago, then began to complain of moderate bone pain in the leg, with some disability, which upon investigation by exploration, incision, and frozen section, proved to be a periosteal sarcoma of the round-celled variety, for which a high amputation is being performed today, with an outlook that is almost hopeless.

This case gives you an example of the extreme malignancy of this type of bone lesion. Dr. Bloodgood, who has had, perhaps, about as large an experience in bone tumors as any man in the country, reports only two cases of periosteal round-celled sarcoma that remained cured six years after operation. Dr. Coley's experience has been about the same. Therefore, in view of the fact that sarcoma of the long bones, is practically always a fatal disease, most of the patients succumbing in a few months to metastasis in the lung, regardless of the method of treatment employed, and considering that most bone lesions are benign, and that it is extremely difficult to make a positive diagnosis with the X-Ray, the conclusion has been reached, (by men experienced in these bone tumors) that it is unjustifiable to perform an amputation in a suspected malignant bone tumor, without first exploring and removing tissue for microscopic diagnosis, in spite of the fact that cutting into these tumors is attended with some risk of disseminating the malignant cells.

Of the two forms of bone sarcoma, central and peripheral, the latter is by far the most malignant. The central begins in the medulla of the bone, and as it enlarges gradually expands, and finally perforates the cortical shell. The peripheral begins in the periosteum, and forms a tumor about the bone, which may or may not involve and destroy the bone cortex, so that the shaft may appear quite normal in the X-Ray picture. The central sarcoma must be distinguished from the benign bone cyst, the giant-cell tumor, and various forms of osteomyelitis, many of these lesions being pratically indistinguishable with the X-Ray.

There are, however, a few important points which aid in the diagnosis; namely, the incidence, or absence of pain, the location of the tumor, and the age of the patient. Benign bone tumor is practically unaccompanied with pain, and is first revealed most frequently by pathological fracture. Giant-cell tumor, may or may not be accompanied by pain, and is rarely the seat of pathological fracture. Sarcoma is most always attended by pain, and is practically never the seat of pathological fracture.

Benign bone cyst occurs in the young, and is extremely rare after the age of 20. Giant cell tumor is rare below the age of 20, most common between the ages of 20 and 40. Central sarcoma has been rarely observed in the very young, and is most common after the age of 35. Benign bone cyst practically always occurs in the shaft of the long bones. Giant-cell tumor and sarcoma occur near the epiphysis and this fact accounts, probably, for the frequent incidence of pathological fractures in bone cysts, and its infrequency in the latter condition. Therefore, when presented with a central bone lesion in the young, it is quite safe to keep the patient under observation, as it is probably a benign condition. In older patients exploration is indicated, always bearing in mind the possibility

of a central myxomatous tumor, which is malignant in the sense that it will probably recur if not completely removed, and when discovered at exploratory operation must be thoroughly cauterized, and if it cannot be thoroughly removed in any other way, amputation must be resorted to.

Of the peripheral tumors, the majority by far are benign, consisting of bony exostoses, chondromas, myxo-chondromas, (somewhat malignant) and syphilitic lesions. These can be sometimes differentiated with the X-Ray; the exostosis giving a distinct well defined shadow, in contra distinction to the faint ill-defined shadow of the chondroma or the sarcoma. In practically all of these lesions, the normal outline of the bone cortex is not altered.

In spite of the almost hopeless outlook that has been evidenced in the past history of these bone sarcomas, it may be possible that by early recognition of these conditions, a more hopeful prognosis may be offered. It is therefore highly important, as emphasized by Dr. Bloodgood, to investigate as early as possible, any patient complaining of pain in the bones or near the joint, to the end that these lesions may be early discovered and subjected to prompt treatment.

WATER BALANCE, DIABETES INSIPIDUS AND WATER INTOXICATION.

NOVEMBER MEETING OF THE UNIVERSITY OF WISCONSIN MEDICAL SOCIETY.

BY DR. L. G. ROWNTREE, ROCHESTER, MINN.

Dr. Rowntree introduced his subject with a historical sketch of diabetes insipidus. He gave its frequency as 15 cases in 100,000 patients examined at the Mayo Clinic quoting his authorities for the diversified opinions of the influence of the pituitary body on diuresis. He stated that the coincidence of pituitary disease with diabetes insipidus (21 cases on record) depended on a decrease in the function of this gland. He next gave examples of the involvement of the pituitary by tumor or infectious granulomata. The cardinal symptoms of diabetes insipidus are polyuria, thirst polydipsia. In the cases of organic involvement there are added neighborhood symptoms. The quantity of urine is variable at different times and under different conditions, and of course the amount varies with the individual case. Many recover and others die of intercurrent disease. He divided diabetes insipidus into two groups: I. Symptomatic or Idiopathic, II. Secondary.

He next reviewed the work of Cushing and others on section of the infundibulum and removal of the posterior lobe, the more recent evidence favoring the belief that any puncture of the tuber cinereum may cause polyurea. Nervous symptoms are secondary to polyuria. He quoted Trousseau's famous case which excreted 43 liters of urine a day coupled with marked boulimia. As to treatment, fluid restriction gained nothing but the administration of pituitary extract was attended by early disappearance of thirst. Indeed water tasted flat and stale. All symptoms were proportionately improved. In the course of treating one of these cases Dr. Rowwntree induced the patient after thirst had subsided from the use of pituitary extract to take fluids up to the previous level. Nausea with marked distress and asthenia resulted. This result was repeated and led to the studies on water intoxication. Thirst he stated as due to a local dryness of the mouth and it in turn was dependent on decreased fluids in circulation.

Contrasting the action of pituitary extract with histamin he remarked no similar decrease in thirst in diabetes insipidus on the administration of the latter. The difference in local reaction of these two substances is another proof of their different nature, in that about the point of injection of pituitary extract there is a marked red area surrounded by a pink areola while with histamin the white spot appears at the point of injection surrounded by a red areola.

Studies on the effect of the drugs commonly used in diabetes insipidus showed no influence on the water balance. Valerian, ergot and bromides were without effect. Pituitary extract alone reduced the thirst, concentrated the urine and reduced the output. In a normal individual pituitary extract had no effect on molecular concentration or the plasma volume, nor is there a change in the basal metabolism.

Continuing the discussion on water intoxication, Dr. Rowntree stated that 18 c.c. of pituitary extract had been administered intravenously to a dog without evidence of the toxic effect. However, repeatedly in animals treated with pituitary extract the threshold of safety of administration of water was broken down. Furthermore, section of the nerves to the kidneys apparently augmented this effect. In animals the syndrome of water intoxication was described as first, marked depression, then nausea and retching which if not heeded and met by the further administration of water were succeeded by muscular twitching and convulsions. These conculsions were either tonic or clonic and the animal was either conscious or unconscious. Stupor might supervene but, if water was withdrawn, the animals the next day had returned to normal. If the water was pushed the convulsions became more severe or coma supervened. Death resulted in from three to four hours. Dr. Rowntree has, by doubling the intake of water, obviated the necessity for the use of pituitary extract in the production of the syndrome. He observed the interesting fact that no amount of normal saline intravenously would reproduce the sumptoms. Furthermore, postmortem has failed to reveal any edema of the brain to explain this condition, and it would appear that the clinical picture of uremia in any of its manifestations might be reproduced by the overadministration of water.

The paper was discussed by Dr. Bradley.

EXPERIMENTAL ARTERIO-SCLEROSIS.

DECEMBER MEETING OF THE UNIVERSITY OF WISCONSIN MEDICAL SOCIETY.

BY DR. L. H. NEWBURGH, UNIVERSITY OF MICHIGAN, ANN ARBOR, MICHIGAN.

Dr. Newburgh outlined the literature and researches into the subject. He next discussed the two types which were found in animals under the conditions of experimentation.

I. Resembles the human type with its intimal thickening and early fatty infiltration and thick connective tissue changes.

II. Primarily involves the media with necrosis and calcification.

However, grossly, these two types may be indistinguishable. Experimental bacterial injections (cocci, bacillus typhosus and other organisms) in rabbits have reproduced the human type. In critical reviews of the work of reproducing arterio-sclerosis by adrenalin injections there has been found constant tendency to sacculation or aneurismal deformity due to necrosis and calcification of the media. Dr. Newburgh suggested that this might account in certain isolated cases for the beaded type of sclerosis of the radials but scarcely for the changes in the larger vessels and aorta.

Klotz has shown that adrenalin is a muscle poison and that this alone accounts for its attacking the media of the vessels.

Taking up the experimental work of the production of arterio-sclerosis by abnormal diets in rabbits, Dr. Newburgh stated that analogous changes to those produced by bacterial suspensions resulted on the feeding of milk, eggs or meat. Various elements in this abnormal diet have been blamed for the resultant pathology; but he argued that the high cholesterin content of the lesions failed to prove the causative relation of this element. Indeed when fed alone in enormous quantities it did not cause the characteristic arterial changes. There must be some primary change or injury to the wall before cholesterin appeared in the lesion.

In Dr. Newburgh's personal researches he used rabbits as the experimental animals and controlled them carefully as to age and general hygienic conditions, particular attention being paid to cleanliness and complete avoidance of extraneous bacterial invasion. As the test diet, meat loaf composed of powdered beef, flour, etc., in two strengths, the first containing 26% total protein and the second 36% total protein was used. The advantage of this diet was the primary improvement in the nutrition of the animals. On diet II, within six weeks the earliest lesion appeared and at four months arterio-sclerosis was a constant finding. Furthermore, the degree of sclerosis was progressive with the continuance of the diet and in some cases extended to involve the entire length of the aorta. On diet I, the rabbits did not develop the typical lesions until the sixth month. Thereafter 76% of the test animals developed sclerosis. Substantiating the importance of the diet in this causative relationship, none of the control animals were similarly affected. Dr. Newburgh emphasized the point that there was no attempt made to directly apply the experimental data to the clinical entity. He briefly outlined his work on inducing nephritis experimentally by the high protein diet in rabbits.

POSTGRADUATE COURSES IN OBSTETRICS.

Visits to Some Leading Obstetrical Clinics.

University of Wisconsin Extension Course, 1922.

Every physician knows the value of visiting large clinics. Nothing else quite takes the place of this in stimulating interest in work and progress in the art of medicine. Few, however, can afford the time and expense necessary for frequent visits to distant clinics. The next best thing, then, is to have the clinic brought to the physician by the aid of moving pictures, especially when the pictures are accompanied by a specialist who can call attention to details which might escape one less familiar with the films. There is no field of medicine in which familiarity with advances in science and art is more important than in that of obstetrics. Fortunately, extensive series of moving pictures have been made at three of the leading obstetrical clinics of the world, that of Professor Wertheim at Vienna, that of G. Drummond Robinson, M. D., F. R. C. P., Westminister Hospital, at London, and that of James Markow, M. D., First Division Lying-in Hospital at New York. Still more fortunately these three sets of films supplement one another in an admirable way. Each takes up the subject from a different point of view. The Vienna films stress some of the more difficult procedures in obstetrics, the London films help to make clear the physiology of labor by the use of animated drawings as well as of moving pictures of the patients, the New York films stress the importance of the technique of diagnosis and delivery, and the technique of Caesarian section under local anethesia is shown in a film made by Dr. Farr of Minneapolis.

The Extension Division of the University of Wisconsin has been fortunate enough to secure the rights for these films in Wisconsin and has also secured the cooperation of several specialists in obstetrics who can explain the films when shown,—Dr. C. Henry Davis, Chairman, Dr. Griffith Jones and Dr. Harold Shutter of Milwaukee and Dr. Carl Harper of Madison. Members of County and Dis-

trict Medical Societies thus have an opportunity to visit some of the chief obstetrical clinics of the world in company with a specialist and to see a good deal more than could possibly be seen at one visit at any one clinic since the pictures are of selected cases and have taken years to prepare.

It is proposed to arrange the courses based on these films as follows:

COURSE 1. Two illustrated clinical conferences on normal delivery given on the afternoon and evening of one day.

COURSE 2. Two illustrated clinical conferences on difficult cases given on the afternoon and evening of one day.

COURSE 3. Two illustrated clinical conferences on toxemias of pregnancy and on Caesarian section.

If desired, there may be arranged in addition a special public lecture illustrated by moving pictures showing the origin of life, especially designed for the general public.

The topics taken up in the various courses of lectures are as follows:

COURSE 1.

A. Clinical conference

Lantern slides

a. Examination of patient
b. Normal labor
c. Occipito-posterior
d. Breech
e. Face.

Motion Pictures, New York films

B. Motion pictures

a. Normal labor, London film
b. Normal labor, Vienna film
c. Breech, London film
d. Breech, Vienna film
e. Face
f. Methods of artificial resuscitation
g. Posture in labor

COURSE 2.

A. Clinical conference

Lantern slides

a. Placenta Previa
b. Premature separation of placenta
c. Introduction of bag
d. Combined version
e. Podalic version and extraction
f. Forceps

B. Motion Pictures

a. Delivery of breech
b. Podalic version
c. Forceps
d. Craniotomy, dystocia from aftercoming head, dead baby
e. Craniotomy, dead baby with vertex presentation
f. Caesarean section

COURSE 3.

A. Clinical conference

Lantern slides

a. Toxemias of pregnancy
b. Eclampsia
c. Induction of labor
d. Caesarean section

B. Motion Pictures

a. Eclampsia
b. Caesarean section
c. Operations in Wertheim Clinic

COURSE 4.

A. Popular lecture

a. Motion pictures, "How Life Begins"
b. Maternity care a community problem

COURSE 5.

A. Motion pictures for district medical meetings.

a. Reels showing normal and abnormal labor from Courses 1, 2, and 3
b. Lantern slides showing labor among primitive peoples will be added if desired

Arrangements to give the above courses before county medical societies can be made by addressing the secretary of the State Medical Society, Rock Sleyster, Wauwatosa.

PREVENTIVE MEDICINE

Edited by
W. D. STOVALL, Chairman
Section on Preventive Medicine, State Medical
Society of Wisconsin

This Section is open to all members of the State Medical Society and others who wish to discuss subjects pertaining to Public Health. Original articles, and criticisms of statements appearing in this section are earnestly solicited. Questions concerning public health procedure will be answered. Address communications to Dr. W. D. Stovall, State Laboratory of Hygiene, Madison, Wis.

THE PUBLIC HEALTH NURSE AS AN EPIDEMIOLOGIST.

By Robert Olesen, Surgeon, United States Public Health Service, Epidemiologic Aide with Wisconsin State Board of Health, Madison.

To realize one's limitations is fully as important as knowing one's ability to produce results when the occasion demands. Were this general principle more generally acknowledged and practiced fewer serious mistakes would ensue. Especially is this true in the field of preventive medicine, where human life and happiness are the stakes involved. Were ample expert assistance invariably available in the presence of communicable diseases it is reasonably certain that less sickness and fewer deaths would occur. Unfortunately, however, competent aid is more frequently absent than present under these condition.

The public health nurse occupies an increasingly prominent position in the field of preventive medicine. She is the buffer, as it were, between the lay people on the one hand and the professional people, represented by physicians and health officers, on the other. Both sides indicate a growing dependence upon the public health nurse. While the opportunity for service is correspondingly increased the responsibilities are in no wise diminished. It becomes necessary, therefore, to consider carefully the numerous factors involved prior to embarking upon new enterprises. This observation appears to be particularly applicable to the assumption of a duty which, in so far as the Statutes of Wisconsin are concerned, is apparently not contemplated. Particular reference is made to epidemiological study, the keystone of intelligent effort directed to the prevention and control of transmissible diseases. In Wisconsin, the duties of the public health nurse, as legally defined, are numerous. The statutes prescribe 9 diversified activities in which the nurse should engage. Several of these can not, by even the most liberal interpretation, be considered public health especially directed to the prevention of unnecessary sickness and premature death from the communicable diseases unless it is contained in the 10th and final statutory requirement, which enjoins the nurse "to perform such other duties as may be assigned to her."

Needless to say no nurse should wait until the task of suppressing preventable diseases is assigned to her. In fact she may as well realize that her contribution to this phase of public health endeavor is definite, vital and necessary. If it be conceded that the public health nurse in conjunction with her numerous other obligations, should assume a part in communicable disease work, it becomes necessary to indicate the direction in which this participation may most profitably be directed.

The science of epidemiology, while directed as its meaning indicates, to the study of unusual disease prevalence, may in a broader sense, apply to other conditions which effect the welfare is required, under the law, to engage in certain specified activities. These include attention to questions involving juvenile delinquency, truancy, probation, indigency and child labor, truly a wide range of social subjects. The solution of these problems manifestly requires painstaking investigation, orderly arrangement of assembled facts, careful analysis of data and the application of proven corrective measures. That the investigation of social matters presents a striking resemblance to epidemiological study is readily apparent. Therefore, knowledge of the procedure to be instituted in determining the reason for disease prevalence will undoubtedly prove serviceable in sociological investigation.

The prime requisite for a successful epidemiologist is a suspicious as well as an orderly mind. One skilled public health worker facetiously defines epidemiology as "the science of ringing door bells", thereby directing attention to the necessity for gaining first-hand information, frequently at considerable inconvenience to the investigator. The need for obtaining accurate data through personal investigation emphasizes other qualifications the epidemiologist should possess. The disease investigator should, especially during preliminary investigations, assume a receptive attitude to all information which may appear

to influence the study in which he is engaged. At the same time it is essential to discern between essential and nonessential information. The successful epidemiologist must be a diplomat, judge and lawyer combined, yet tempered by the saving grace of humor. The ability to elicit the largest fund of truly valuable information in the shortest space of time should constitute a constant aim.

While it is desirable that an epidemiologist be well-versed in diagnosis it is not necessary to possess medical training. Moreover, a working knowledge of curative medicine is unnecessary. There are, however, certain points connected with the occurrence of communicable diseases which must be clearly understood if the epidemiologist is to attain results. The person who aspires to distinction in this field should have a clear conception of the causes of communicable diseases. Reasoning from analogy, it is highly probable that all communicable diseases are caused by living micro organisms. Many of these germs are already known and can, by bacterioligical methods, be seen, recognized, measured and cultivated. In the majority of these instances diseased human beings are the natural habitants of the organisms and therefore the reservoirs of infection. There are certain exceptions to this general rule, as anthrax, glanders, rabies and tetanus usually originate in the lower animals. It will also be recalled that insects are the intermediary hosts in typhus fever, yellow fever, malaria and plague.

Generally speaking the organisms leave the diseased body with the liquid or solid excretions or with abnormal discharges. When these excretions or discharges are transferred from the sick to the well, communicable disease frequently results, provided, of course, that the infective material has taken a short and direct route during which time the disease germs were able to withstand natural destructive angencies.

The principal portals of entry into the human body of disease producing organisms are:

1. Through natural body openings such as the nose and mouth, into the cavities of the body.

2. Through wounds, including the bites of certain insects.

3. Through certain organs, such as the tonsils and adenoids.

The means by which disease germs are actually transferred from the sick to the well are of special importance to the epidemiologist. First and probably foremost is the transmission through direct contact with the sick or through the medium of disease carriers. This may take place most frequently by droplet transfer in face to face contact, less frequently through the medium of infected hands and more infrequently through the medium of freshly soiled articles. In brief modern epidemiological methods depend largely upon the recognition of the sick persons, carriers or infected insects as the sources of danger rather than the inanimate objects with which they come in contact. It is upon this premise that terminal disinfection after communicable diseases has either been modified or discontinued by many health authorities. Among the other modes of communicable disease infection which should receive adequate attention are those in which milk, water and insects are concerned. Considerable doubt now exists as to the possibility of communicable disease transfer through the medium of supposedly infected dust. This doubt again reflects the modern tendency to regard the sick person or carrier as the real source of danger.

The procedure to be followed in an epidemiological study must be rational and thorough. It is useless to begin such an investigation without a prearranged and logical plan, each step of which has for its purpose the attainment of a definite object. A definite object is all the more desirable because human life is involved, delay and indecision being responsible for additional suffering or death.

The first step in making an epidemiological study is to have available an ample supply of uniform case cards of convenient size on which data may be recorded. The practice in some quarters of assembling information without such a guide frequently results in the omission of vital facts. The uniform case cards being available it becomes necessary to locate the patients who are alleged to be suffering from communicable disease. One of the most difficult as well as crucial steps is the vertification of the diagnoses of the cases under investigation. Correct diagnoses call for definite knowledge of the physical signs and symptoms of disease, a knowledge of the technique for obtaining bacteriological specimens and ability to interpret the findings is highly desirable. It is difficult to engage in effective epidemiological work without this knowledge. Therefore, unless the pub-

lic health nurse is willing to make a study of this branch of medicine, her value in preventing sickness will be greatly mitigated. However, the acquisition of a working knowledge of this subject is neither a difficult or impossible task. Ample descriptive literature, clincal experience and diagnostic training are freely available.

Being certain of the identity of the affection which is being studied it is incumbent upon the epidemiologist, by a careful and systematic canvas of the sick, to insure the accumulation of a sufficient amount of uniform data. The information having been collected an analysis is required to determine the common factors involved in the spread of the illness. What may have seemed an impossible task in the beginning frequently looms up in quite a different light as similarities appear in increasingly large numbers. The practicing physician often has the same experience when attempting to diagnose what appears to be, on first sight, an obscure malady. Yet when the patient is examined carefully and thoroughly, clues begin to appear, frequently giving a hint as to the correct diagnosis. Similarly, in epidemiological work the best results follow systematic and thorough studies, involving apparently trivial as well as more obvious factors. Having completed the analysis of the data collected and arrived at a conclusion as to the manner in which the infection is spread it becomes necessary to apply up-to-date and authoritative measure which experience has shown to be effective in controlling the communicable disease in question.

The epidemiological procedure which has been outlined may appear unnecessarily complicated, particularly for public health nurses. However, when human life is involved it behooves those charged with its preservation to proceed in an orderly and logical fashion to determine the reasons for its existence. As one becomes more experienced in the prevention and control of transmissible affections it is frequently possible to arrive at a safe epidemiological conclusion without passing through the successive steps already outlined. In an emergency this is a distinct advantage. Ordinarily, however, the most satisfactory deductions are reached as a result of precise investigation and observation. Many of the most competent and experienced epidemiologists invariably include all of the steps that have been outlined.

The principal questions which will naturally arise in the mind of the public health nurse in this connection may be briefly stated as follows:

1. Is the public health nurse qualified to perform epidemiological work?

2. Will the public health nurse neglect other duties by engaging in this work?

3. What are the natural limitations of the public health nurse as an epidemiologist?

4. Is epidemiology an aide in the performance of other public health nursing work?

In answering these questions it immediately becomes apparent that the participation of the public health nurse in the field of preventive medicine is a matter of expediency. With only 9 full-time city health officers, 803 lay health officers and with 892 part-time physician health officers in the State of Wisconsin, it can readily be seen that unless the public health nurses lend epidemiological assistance that comparatively little of this essential work will be performed. Moreover, the fact that the physician health officers serving part-time are primarily interested in curative rather than preventive medicine must likewise serve as a stimulus to increased effort on the part of those who are fitted and can devote the time to prophylactic work. As to the qualifications of the public health nurse for engaging in work of this character it need only be said that by comparison with the previously mentioned health officers she is in position to secure far better results. The limitations of the nurse arise largely from a lack of diagnostic training. However, study and experience will soon overcome this difficulty.

Inasmuch as physicians may take offense at what they regard presumption on the part of the nurse engaged in the prevention and control of communicable diseases, it is well to assume the attitude of an advisor and co-operator rather than a leader and dictator. There are public health nurses in Wisconsin who perform epidemiological work in such an unobtrusive manner as not to excite the question that they are primarily responsible for the excellent results that follow. After all, the prevention of unnecessary sickness and premature death is the goal towards which public health effort is directed. Thorough accomplishment may not be duly accredited yet the satisfaction of a duty well done is usually an ample reward.

There is no gainsaying the fact that the mental training fostered by purely epidemiological work is of distinct value to the nurse in other fields of public health and social endeavor. The orderly investigation, close observation and cool analytical reasoning demanded in epidemiological work can not but increase the all-round effectiveness of the nurse.

The public health nurse should at least be familiar with the fundamentals of epidemiology if for no other reason than the mental training afforded thereby. It is even more important to have a working knowledge of the subject because nurses are frequently the only full-time health workers in a locality. Unless such work is performed by them it will be neglected entirely. Consequently sickness and death will follow.

It seems reasonable to conclude, therefore, that the public health nurse, by reason of her general training, viewpoint and responsibilities, is peculiarly fitted to render such epidemiological service as may be consistent with the satisfactory performance of her manifold duties prescribed by law.

PUBLIC HEALTH NEWS ITEMS.

Where one physician quarantines for a communicable disease, and a second physician later diagnoses the case as non-communicable and orders quarantine sign down, the local health officer shall insist upon the quarantine for the graver disease, in the interest of the public protection.

Where diphtheria, scarlet or typhoid fever is present, the sale of milk or other dairy products from the home is prohibited unless the milking and other work in connection with the sale are completely dissociated from the quarantined family.

Where a garbage collection ordinance is nonexistent, it is the duty of each property holder to dispose of his wastes himself, and the State Board of Health has no authority to compel a municipality to remove garbage, ashes, etc., except to abate a nuisance. Local ordinances are strongly advised, however, as a measure for municipal sanitation.

If a local health officer is paid on a per diem basis, he can not legally make an extra charge for taking cultures of a family in quarantine. The health board is charged with fixing his compensation.

A chiropractor was informed, in reponse to his inquiry, that he is not permitted by law to enter or leave a quarantined home, this right belonging only to the health officer or his legal representative, the attending physician who is licensed by the State Board of Medical Examiners, clergymen, or nurse in attendance. Chiropractors are not licensed in Wisconsin.

A clergyman who goes in and out of a quarantined home and visits other homes, regardless of the nature of the disease present, abuses his privilege, a health board member was informed. The law permits such visits by a clergyman in cases of fatal illness or to comfort the afflicted, and it is not expected he will be called at other times. He may be prohibited from making further visits unless he obtains a permit from the health officer.

Registered nurses applying for Wisconsin registration under the new nursing education law are not obliged to have resided in the State for six months or any other specified time. Upon registering, however, they must be legal residents of Wisconsin, and that status is established by a nurse upon arriving at any place with the intent of making it her home.

Miss Lucile R. Works submitted her resignation as director of the State Cooperative Laboratory at Oshkosh, effective December 1st, and the State Board of Health appointed Miss Clarissa McFetridge, Oshkosh, recently in private laboratory work at Cheyenne, Wyoming, to succeed her.

The Bureau of Communicable Diseases of the State Board of Health has announced the publication of a new edition of the communicable disease rules. It will be noted that the new booklet has several new features which will be apparent from a casual survey. The laws enacted at the last session of the legislature have been incorporated and in other ways the material has been brought up to date. The table of contents enables one to locate all references to subject with great ease. Copies of the new booklet will be sent to all physicians, health officers and public health nurses.

Dr. H. B. Sears of Beaver Dam has been appointed a Deputy State Health Officer for duty in the fourth sanitary district with headquarters in Eau Claire. During the last thirty years Dr. Sears has practiced medicine in Beaver Dam. He succeeds Dr. V. A. Gudex.

Dr. V. A. Gudex, who has been serving as De-

puty State Health Officer for the fourth sanitary district has been assigned to duty in the Bureau of Communicable Diseases of the State Board of Health.

FURTHER OBSERVATIONS ON TREATMENT OF SCARLET FEVER WITH IMMUNE HUMAN SERUM.

G. H. Weaver, Chicago (*Journal A. M. A.*, Oct. 29, 1921) reports on the results of the intramuscular injection of the serum of convalescent scarlet fever patients in fifty-four cases of scarlet fever. Usually the serum is injected in amounts of from 60 to 90 c.c. Often one-half is injected in the muscular mass on the outer side of each thigh. Occasionally, it has been injected intravenously, but with no apparent advantage. A second dose after twenty-four hours has been given at times when the first dose was not followed by satisfactory improvement, or when improvement was followed by a tendency to relapse to the previous condition. Among the beneficial effects the most prominent is improvement in the general condition of the patient, which is out of proportion to alteration in the temperature curve. Two or three hours after the injection, the temperature begins to decline and continues to do so for from twenty to thirty-six hours. It sometimes reaches normal, but usually remains a little above. Subsequently, there is usually a moderate rise followed by a gradual fall to normal. Occasionally the fever terminates by crisis, never again raising above normal. The earlier in the disease the serum is given, the more pronounced is the effect on the temperature. Improvement as regards the toxic symptoms is often very marked. Beginning two or three hours after the injection, restlessness and delirium begin to subside, the pulse improves in quality and is slower; cyanosis disappears, and a patient who had appeared to be on the brink of dissolution in the afternoon when serum was given appears well on the road to recovery the next morning. This effect on the general condition of the patient is quite constant, even in patients in whom complications progress, and has been emphasized by all who have had experience with the serum. The technic of the preparation of the serum is described.

INTERNATIONALIZING SERA STANDARDS.

Cooperation of the foremost laboratories of the world, including the United States, for the unification of international standards of anti-toxic sera has been begun on a large scale by the League of Nations Health Committee. Already two preparatory conferences have been held; the work divided amongst the various national laboratories; and the individual studies been begun.

The United States has agreed to cooperate in this work through the United States Public Health Service at Washington and through the presence at the conferences of Dr. Rupert Blue, Assistant Surgeon General, stationed at Paris. German scientists will also take part, as well as Japanese and representatives of all the greater European medical services.

The work involved is considered of great importance to the medical world. Up to now there has been as much confusion in the various national standards of measuring the strength of anti-toxic sera for diseases such as dysentery, tetanus, diphtheria, syphilis, meningococcus and pneumococcus as there has been in the different currency systems in the world.

This has had two serious effects. First, the American scientist, for instance, is handicapped in studying methods of treatment of various vital diseases abroad, because of the different standards of measuring the strength of the anti-toxic sera employed; secondly, as international trade in sera is increasing, it represents not only an inconvenience, but a positive danger to have their strengths listed at varying standards.

In order to obviate these difficulties, the Health Committee of the League of Nations began a series of studies last October, which resulted in an international conference at London in December, when some of the foremost scientists of the world came together to prepare plans for the first joint experiemental inquiry of the sort ever attempted. A program was adopted whereby the study of the effects of the various standards was divided according to diseases amongst the various laboratories represented. To the Hygienic Laboratory at Washington, for instance, it was proposed to allocate the study of tetanus and diphtheria. As soon as these studies have been completed, they will be coordinated through the State Serum Institute at Copenhagen.

Other bodies which will cooperate in the work are the Medical Research Council of Great Britain, Pasteur Institute of France, State Institute of Italy, State Institute of Warsaw, Hygienic Institute of Basel, Pasteur Institute of Brussels, Kitasato Institute of Japan, as well as Austrian and German organizations.

CLASSIFICATION OF CARDIAC DIAGNOSIS.

The classification of heart disease used in the cardiac clinic at the Massachusetts General Hospital is here presented by Paul Dudley White, Boston, and Merrill M. Myers, Des Moines, Ia. (*Journal A. M. A.*, Oct. 29, 1921). The three main headings are: (1) etiology; (2) structural change, and (3) functional condition.

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Douglas	T. H. Shastid, Superior	F. J. Broghammer, Superior.
Dunn-Pepin		
Eau Claire	L. H. Flynn, Eau Claire	H. M. Stang, Eau Claire.
Fond du Lac	W. H. Folsom, Fond du Lac	D. N. Walters, Fond du Lac.
Grant	J. H. Fowler, Lancaster	M. B. Glasier, Bloomington.
Green	W. B. Gnagi, Monroe	W. B. Monroe, Monroe.
Green Lake-Waushara-Adams	G. E. Baldwin, Green Lake	A. J. Wiesender, Berlin.
Iowa	D. B. Hamilton, Dodgeville	W. J. Pearce, Dodgeville.
Jefferson	G. E. Eck, Lake Mills	H. P. Bowen, Watertown.
Juneau	E. H. Townsend, New Lisbon	A. T. Gregory, Mauston.
Kenosha	A. L. Mayfield, Kenosha	Jos. N. Palt, Kenosha.
La Crosse	J. K. Schreiner, La Crosse	R. D. Jamieson, La Crosse.
La Fayette	H. O. Shockley, Darlington	R. B. Quinn, Darlington.
Langlade	L. A. Steffen, Antigo	J. C. Wright, Antigo.
Lincoln	H. G. Hinckley, Merrill	A. R. Wittman, Merrill.
Manitowoc	A. M. Farrell, Two Rivers	V. V. Kellner, Maribel.
Marathon	R. M. Frawley, Wausau	M. L. Jones, Wausau.
Marinette-Florence	J. V. May, Marinette	C. H. Boren, Marinette.
Milwaukee	P. H. McGovern, Milwaukee	Dan. Hopkinson, Milwaukee.
Monroe	W. S. Waite, Kendall	C. D. Beebe, Sparta.
Oconto	R. J. Goggins, Oconto	C. J. Ouellette, Oconto.
Oneida-Forest-Vilas	W. C. Bennett, Rhinelander	E. R. Boyer, Rhinelander.
Outagamie	N. P. Mills, Appleton	V. F. Marshall, Appleton.
Ozaukee	G. S. Cassells, Port Washington	A. A. Mesch, Saukville.
Pierce	C. A. Dawson, River Falls	Rolla Cairns, River Falls.
Portage	C. von Neupert, Jr., Stevens Point	J. H. Lawrence, Stevens Point.
Price-Taylor	G. C. Nedry, Medford	G. C. Wichman, Rib Lake.
Racine	Susan Jones, Racine	E. Tompach, Racine.
Richland	H. C. McCarthy, Richland Center	G. Benson, Richland Center.
Rock	F. W. Leeson, Beloit	E. B. Brown, Beloit.
Rusk	C. E. Bugher, Ladysmith	L. M. Lundmark, Ladysmith.
Sauk	D. M. Kelly, Baraboo	Roger Cahoon, Baraboo.
Shawano	R. E. Van Schaick, Caroline	E. L. Schroeder, Shawano.
Sheboygan	Jos. Elfers, Sheboygan	G. J. Hildebrand, Sheboygan.
St. Croix	E. A. Wright, New Richmond	O. H. Epley, New Richmond.
Trempealeau-Jackson-Buffalo	N. S. Simons, Whitehall	F. T. Weber, Arcadia.
Vernon	J. Christenson, Westby	F. E. Morley, Viroqua.
Walworth	R. C. Halsey, Lake Geneva	M. V. Dewire, Sharon.
Washington	H. F. Weber, Newburg	A. H. Heidner, West Bend.
Waukesha	G. H. Perrin, Menomonee Falls	S. B. Ackley, Oconomowoc.
Waupaca	E. H. Jones, Weyauwega	A. M. Christofferson, Waupaca.
Winnebago	F. G. Connell, Oshkosh	H. W. Morgenroth, Oshkosh.
Wood	D. Waters, Grand Rapids	W. G. Sexton, Marshfield.

SOCIETY PROCEEDINGS

CHIPPEWA COUNTY

A meeting of the Chippewa County Medical Society was held at the Hotel Northern, Chippewa Falls, December 17th. A banquet was served at 7:30 followed by a lecture by Dr. W. F. Lorenz, Mendota, which was illustrated with moving pictures. Physicians from Eau Claire and other surrounding towns were guests of the society. A concert by a male quartette completed the program.

FOND DU LAC COUNTY

At a meeting of the Fond du Lac County Medical Society held at the Hotel Palmer, Fond du Lac, matters touching upon the general health of the community were fully discussed. Plans for building an addition to the St. Agnes Hospital, the need of an isolation hospital and systematized health direction all over the city and county were the principal items of study and discussion.

KENOSHA COUNTY

The annual business meeting and election of officers of the Kenosha County Medical Society, postponed from December 7th, was held at the new Physicians' Reading Room in the Simmons Public Library, Kenosha, Wednesday evening, December 14th. Twelve members were present. Mr. Hixon of the U. S. Standard Serum Company, Woodworth, Wisconsin, was by unanimous vote of the society invited to become an associate member. A letter from the Milwaukee County Medical Society urging more definite activity in the election of state legislators, who are versed in medical matters and who are in sympathy with the ideals of legitimate medical practitioners, was read and favorably discussed.

The following officers for 1922 were elected: President, Dr. A. L. Mayfield; Vice-president, Dr. B. J. Schwartz; Secretary, Dr. Jos. N. Palt; Censors, Dr. C. A. Palm, J. F. Hastings and G. H. Ripley. The President was instructed to appoint annually a member of the library committee to act as chairman, the remainder of the committee to consist of the president and secretary of the society. This action was taken to perpetuate the medical library which, through the efforts of Dr. Palm, has been successfully established.

The Physicians' Reading Room recently established at Simmons Library is now open to the physicians of Kenosha. It contains about 800 volumes with several of the very latest books and several of the best medical journals. The Library Board has very kindly granted an appropriation which it is hoped will be renewed annually, thus securing for the profession an up-to-date reference library.

H. M. Ripley, M. D., *Secretary.*

LANGLADE COUNTY.

The Langlade County Medical Society held its annual medical meeting at the Hotel Butterfield, January 3, 1922. A chicken dinner was served at 6 p. m., all members present enjoying the repast. Members present were: Drs. L. A. Steffen, E. R. Murphy, I. D. Steffen, M. J. Donohue, G. W. Moore, F. V. Watson, E. J. Donohue, G. E. Moore, and J. C. Wright.

The meeting was called to order by the President, Dr. L. A. Steffen. The minutes were read and approved. Several communications read and discussed. Various matters were considered. The fee bill was somewhat revised. It was moved and seconded that all obstetrical cases in the city, are to be $25.00 cash. Day calls are to be $2.00 and night calls $4.00.

The election of officers resulted as follows: Pres., L. A. Steffen; Vice-Pres., E. R. Murphy; Sec. and Treas., J. C. Wright; Delegate to State Medical meeting, G. W. Moore; alternate, J. C. Wright. Following the business meeting a smoker and social hour were enjoyed. A general good feeling prevailed among the members, and a successful meeting was the sentiment of all. Having completed all business expected to be transacted, it was moved and seconded to adjourn.

J. C. Wright, M. D., *Secretary.*

MILWAUKEE COUNTY

The regular meeting of the Society was held at the Hotel Pfister on Friday evening, January 13th, 1922, at 8:30 o'clock. The following program was presented:

I. Methods of Performing Thoracotomy Determined by Physiology and Controlled by Late Results (with lantern slides illustration) by Dr. J. L. Yates.

Discussion opened by Dr. W. F. Middleton, Medical Clinic, University of Wisconsin.

II. Natural Selection of Cells in Relation to Problems of Immunity, Carcinoma and the Physiological Basis of Subjective Consciousness, by Dr. J. J. Seelman.

At the last regular meeting a motion was made and carried that the yearly dues be raised one dollar; at the present time the dues are $7.00, one dollar of which goes to the County Society and six dollars to the State Society. Hereafter, as the above motion was finally passed as presented at the meeting, the yearly dues will be eight dollars.

Daniel Hopkinson, M. D., *Secretary.*

MILWAUKEE MEDICAL SOCIETY

The regular meeting of the Milwaukee Medical Society was held Tuesday, December 13, in the Health Service Building, at 8:15 P. M. A number of interesting clinical cases and pathological specimens were presented, followed by an address on "Basal Metabolism" by Dr. Walter M. Boothby of the Mayo Clinic, and a paper on "The Thyrotoxic Heart," by Dr. M. F. Rogers, Milwaukee.

The annual meeting of the Milwaukee Medical Society was held January 10th, opened by the election of offi-

cers, councilors and elective members of standing committees. The following officers were elected for 1922: President, Dr. C. A. Evans; 1st vice-president, Dr. Wm. Thorndike; 2nd vice-president, Dr. A. L. Kastner; Secretary, Dr. L. G. Sykes; Treasurer, Dr. J. P. McMahon; Curator, Dr. E. A. Smith, and Librarian, Dr. C. H. Davis. The annual reports of the officers were read, followed by the presentation of clinical cases, pathological specimens and interesting Roentgenograms. Miss Maude Slye, Ph. D., of the Sprague Memorial Institute, University of Chicago, whose admirable research work on cancer is well known, read a very interesting and instructive paper on the "Biological Evidence of the Inheritability of Cancer in Man."

L. G. Sykes, M. D., *Secretary.*

MONROE COUNTY

Twenty-two Physicians and Dentists of Monroe County were present at the annual meeting of the Monroe County Medical Society held at Sparta, December 14th. Following the dinner at the Hotel Sidney, there was a general discussion of subjects in common between the two professions; an outline report of the plans of the County Nurse for the ensuing year by Miss Sawyer; and a resumé of the plans and projects of the American Medical Association for the coming year by Dr. W. T. Sarles, of Sparta, who is the Chairman of the Board of Trustees of that Association.

Officers elected for the year 1922 were: W. S. Waite, M. D., Kendall, President; C. D. Beebe, M. D., Sparta, Secretary and Treasurer; and A. R. Bell, M. D., Tomah, Alternate Delegate.

C. D. Beebe, M. D., *Secretary.*

OUTAGAMIE COUNTY

The regular December Meeting of the Outagamie County Medical Society was held at the Y. M. C. A., Appleton, Thursday evening, December 15th, 1921, which was preceded by a dinner, Dr. N. P. Mills presiding. The literary portion of the program was in charge of Dr. G. A. Ritchie, Appleton, and Dr. C. D. Boyd, Kaukauna, presenting the subjects: "A Plea for Safer Parturition" and "Some Points in a Physical Examination of the Chest," respectively. Both papers were excellent and were warmly received by all present and generously discussed. The meeting was well attended, there being 26 present.

V. F. Marshall, M. D., *Secretary.*

RACINE COUNTY

The annual meeting of the Racine County Medical Society for December, 15, 1921, was held in St. Mary's Hospital Class Room, Racine, Wis. The meeting was called to order by the president, Dr. F. C. Christensen. Dr. F. W. Krueger of Burlington was duly elected a member of the society. Dr. F. J. Gaenslen, Milwaukee, discussed the subject of "Etiology and Treatment of Anterior Poliomyelitis."

The following officers were elected for the coming year: President, Dr. Susan Jones; vice-president, Dr. W. P. Collins; secretary-treasurer, Dr. E. Tompach; censor, Dr. W. A. Fulton; delegate, Dr. G. W. Nott; alternate, Dr. J. H. Hogan.

The attendance was fine.

Susan Jones, M. D., *Secretary.*

ROCK COUNTY

The annual meeting of the Rock County Medical Society was held at the Y. M. C. A., Beloit, Tuesday evening, December 27th. Following a dinner, the election of officers for 1922 was held. Dr. F. W. Leeson, Beloit, was elected president; Dr. T. J. Snodgrass, Janesville, vice-president; Dr. E. B. Brown, Beloit, secretary; Dr. Thomas Nuzum, Janesville, delegate, and Dr. Chas. Sutherland, Janesville, alternate.

ST. CROIX COUNTY

At the regular meeting of the St. Croix County Medical Society, held at the Hotel Beebe, New Richmond, December 20th, Dr. E. A. Wright, New Richmond, was elected president; Dr. F. S. Wade, vice-president; Dr. O. H. Epley, secretary, and Drs. H. E. Perrin and L. A. Campbell, censors.

SHAWANO COUNTY

The quarterly meeting of the Shawano County Medical Society was held on December 20th, a majority of the members being present and each taking an active part. The regular order of business was transacted with the election of officers, which resulted as follows: President, Dr. R. E. Van Schaick, Caroline; Vice-president, Dr. J. H. Terlinden, Bonduel; secretary, Dr. E. L. Schroeder, Shawano; delegate, Dr. A. G. Gates, Tigerton, and alternate, Dr. W. J. Ragan, Shawano. Dr. Ragan read a very interesting paper on "Medical Ethics", which was followed by the adoption of a resolution that the society use concerted action in promoting the ethical status of the profession to higher ideals.

WALWORTH COUNTY

The annual meeting of the Walworth County Medical Society was held in Elkhorn, Wednesday afternoon, December 14th. Dr. R. C. Halsey, Lake Geneva, was elected president; Dr. E. J. Fucik, Williams Bay, vice-president, and Dr. M. V. Dewire, Sharon, secretary-treasurer. It was decided to hold the next meeting some time during the winter at Lake Geneva.

NEWS ITEMS AND PERSONALS

Dr. and Mrs. J. B. Gordon of Shawano have gone to Chicago where the doctor will take postgraduate work in diseases of the eye, ear, nose and throat.

An addition is planned for Mercy Hospital, Oshkosh, to be begun early this spring. If the support of the

Oshkosh people is obtained, two wings will be built, one at the north end and one at the south end of the present building. In any event, one wing will be constructed.

The West Allis Physicians' and Surgeons' Association recently entertained the druggists and dentists of the city at a banquet and dance given in the public library building. The aim of the association is the betterment of local conditions and much is being anticipated because of the united efforts being put forth.

Dr. J. F. Brown, Waupun, Superintendent of the Central State Hospital for Criminal Insane, was recently severely injured when a train struck the rear wheel of his car, throwing it thirty feet and completely demolishing it. Dr. Brown sustained several minor injuries but is now well on the road to recovery.

Dr. Gilbert E. Seaman has purchased the three-story residence, corner of Cass and Mason Streets, Milwaukee, and will convert the building into offices and an infirmary for the treatment of eye, ear, nose and throat cases. Dr. Seaman has associated with him Dr. Thomas Tolan, recently of the University of Michigan. The infirmary will be open to other members of the profession.

Dr. George Keenan of Dunn has located in Stoughton. Dr. Keenan is a graduate of Rush Medical College, Chicago, and recently spent two years in study and hospital practice abroad.

Miss Jennie C. Kurmbe has been appointed superintendent of the Maternity and General Hospital, Milwaukee, to succeed Mrs. G. A. Hipke, who has resigned.

Plans for the enlargement of St. Agnes Hospital, Fond du Lac, at an outlay of $500,000, are now under consideration. It is planned to erect a hundred bed addition to the rear of the hospital at a cost of $250,000, together with the enlargement of the power plant, bakery and laundry, and a unit at the front of the hospital to cost the same amount where the administration departments would be centered.

The occupational therapy building at the Mendota hospital for the insane was destroyed by fire. The building was being used to train shell-shocked soldiers receiving instruction under direction of Dr. W. F. Lorenz. The loss amounted to several thousand dollars, and will handicap the training work of the soldiers.

Although Wisconsin is the only state to allow Christian Science treatment under the compensation act, workmen's requests for Christian Science treatment and claims for occupational diseases are almost negligible, E. E. Witte, secretary of the state industrial commission, declares. Only one or two claims for Christian Science treatment are filed during the year, and occupational diseases are due chiefly to lead or surgar poisoning.

Dr. William Fletcher of Salem has purchased a residence there which he plans to have remodeled into a modern hospital.

The Executive Committee of the Milwaukee County Medical Society, courtesy of Drs. Edwin Henes, Jr., E. A. Fletcher, W. T. McNaughton, J. Gurney Taylor, J. J. Seelman and J. L. Yates report a donation of $317.25 from the Milwaukee County body to the Foundation Fund of the Tri-State District Medical Society of Illinois, Iowa and Wisconsin. The amount was voluntarily contributed to the endowment fund for the "support of the splendid purpose for which the Tri-State District Medical Association was organized." The Milwaukee County Medical Society is the first official body in the three states to contribute to the fund although a large number of Wisconsin physicians are individual subscribers.

Dr. O. W. McClusky of Karrington, N. D., is now associated in practice with Dr. Geo. E. Thompson, Kenosha.

Dr. F. V. Malloy, recently of Milwaukee, has located in Crandon.

Bids have been opened for the actual construction of the new state hospital to be erected on the University grounds at Madison. The basement construction has been completed and the bids now advertised are for the complete six-story building.

Under the Sheppard-Towner act, recently enacted by Congress, Wisconsin will receive an annuity for the promotion of the welfare of maternity and infancy through federal cooperation with the state, the state board of health announces. The federal administration of the law is vested in the Children's bureau, and the state's supervision lies with the bureau of child welfare of the board of health. Wisconsin will receive $10,000 the first year, and $5,000 thereafter, these amounts to be given to the states regardless of their size. In addition $710,000 a year will be distributed among the states on the basis of population, provided the amounts thus appropriated are matched by the state. This Wisconsin has already done through the grant of funds for the operation of the bureau of child welfare. Under this apportionment the state is entitled to receive in the first year the further sum of $22,731, which with the $10,000 additional is said to enable the enforcement of a comprehensive child welfare program.

The Industrial Commission has under consideration the advisability of amending the state building code to require all hospitals hereafter constructed to be of strictly fireproof material. This is brought out in a circular letter which the commission is sending to all physicians and surgeons in Wisconsin in which it asks for an expression of opinion as to the advisability of the change. There have been few hospital fires in Wisconsin, but whenever a fire has occurred the very serious consequences have been emphasized. "In most public buildings and places of employment ordinary measures for fire prevention and fire protection provide reasonable safety," the commissions says. "In the case of a hospital, however, adequate exit facilities are not enough, because many of the patients are helpless and

there is serious danger of loss of life if they are disturbed or exposed." The commission recognizes that fireproof construction will be more expensive and will prevent the turning of frame residences into hospitals, as has been done heretofore in many instances in Wisconsin.

Dr. George C. Ruhland, health commissioner, has been invited to become a member of the Royal Institute of Public Health, England, the oldest body of health officers in the world. The institute will hold its next congress at Plymouth, England, May 31 to June 5, 1922, and Dr. Ruhland is invited to attend.

A state maternity hospital to accommodate fifty patients will be opened by the Salvation Army on the Story property at the west end of the Grand Avenue viaduct, Milwaukee, about Feb. 1.

The Fond du Lac County Medical Society has recommended the appointment of a full time health officer and the establishment of an isolation hospital near St. Agnes Hospital. The latter, it holds, should be erected and maintained jointly by the city and county. It would be the duty of the public health officer to coordinate all the health activities of the county and become responsible for them.

Permit fees of druggists and doctors who will apply for permission to handle intoxicating liquors during the coming year are expected to yield over $30,000 to the state, according to W. Stanley Smith, prohibition commissioner.

Members of the Emergency hospital staff, which now consists of seventy-two physicians and surgeons, elected officers at the recent annual meeting and smoker. Dr. W. H. Neilson was elected president; Dr. O. E. Lademan, vice president; and Dr. W. H. Powers, secretary. Resolutions of sympathy were sent to relatives of Dr. Linkman, Dr. Drill and Miss Bruins, members of the staff recently killed in an automobile accident.

Dr. Joseph F. Smith, Wausau, wishes to announce that he has associated with him Dr. Verne E. Eastman, formerly of the house staff of the Presbyterian Hospital Chicago, who will give special attention to internal medicine and diagnostic methods; and Dr. Herbert H. Christensen, formerly of the house staff of St. Luke's Hospital, Chicago, who will assist in the practice of surgery.

DEATHS.

Dr. J. R. Currens died at his home in Manitowoc, December first, after a short illness. Dr. Currens was born in Gettysburg, Pa., in 1855. His parents removed with him to Plymouth, Ill., where he received his early education. He attended Carthage College and then taught school for a number of years. In 1873, Dr. Currens entered Rush Medical College from which he graduated in 1878. He located in Two Rivers the same year to take up the practice of his profession and until the time of his death was in active practice. Dr. Currens served as mayor of Manitowoc for a number of years and was health-officer of that city for twenty two years. He was a member of the Manitowoc County Wisconsin State and American Medical Associations, at one time serving as president of his county society and later as president of the State Medical Society.

Dr. Erwin G. Linkman died in Milwaukee, December 11, 1921, following an automobile accident. Dr. Linkman graduated from Marquette University in 1913 and practiced in Milwaukee until the time of his death. He was a member of the Emergency Hospital staff and had served in France as battalion surgeon in the 701st Engineers. He was a member of the Milwaukee County, Wisconsin State and American Medical Associations.

Dr. L. P. Hinn died at his home in Fond du Lac, December 31, 1921. Dr. Hinn was born in the town of Empire in 1857 and spent his boyhood on his father's farm. He later went to Chicago to take up the study of medicine and graduated from Hahnemann Medical College in 1885. He immediately entered practice in Kohlsville, Wisconsin, where he remained for six years, then removed to Theresa where he also practiced for six years, locating in Fond du Lac in 1897. Dr. Hinn was a member of the Fond du Lac County, Wisconsin State and American Medical Associations.

U. S. VETERANS' BUREAU UNDERTAKING CLEAN-UP DRIVE IN HOSPITALS.

By order of the Director of the U. S. Veterans' Bureau, a Hospital Clean-up Drive is being instituted in every district of the Bureau throughout the entire country. This drive is to be conducted along much the same lines as the general Clean-up campaign which is now drawing to a close. Representatives of the U. S. Veterans' Bureau will go into every hospital and institution in this District (Illinois, Michigan and Wisconsin), for the purpose of assisting the ex-service men in those hospitals to file new compensation claims and to secure adjudication of claims previously filed.

By means of this drive, it is hoped to clear up two kinds of compensation claims of disabled ex-service men; first, to assist the men who have not already filed claims to do so and to secure speedy adjudication of same; second, to clean up all compensation claims of hospitalized ex-service men not receiving temporary total awards since date of hospitalization and claims on which award is with-held for general proof that the man's disability originated and is a result of his service in the U. S. armed forces.

During this special hospital campaign the Bureau will endeavor to bring every hospital case currently up to date.

All ex-service men now in hospitals and in institutions and relatives or friends of these men are urged to see to it that claims falling under the above specification are filed by the men or for the men. Every hospital and institution in which there are ex-service men is being notified in advance of the date of visit of the representative of the U. S. Veterans' Bureau.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

Epidemiology and Public Health. In three volumes. By Victor C. Vaughan, M. D., LL. D. Vol. I—Respiratory Infections. 688 pp. St. Louis: C. V. Mosby Co. 1922. Price, $9.00.

Clinical Diagnosis. By Charles Phillips Emerson, A. B., M. D. 5th edition. 156 illustrations. Philadelphia & London: J. B. Lippincott Co..

Physical Diagnosis. By W. D. Rose, M. D. 2nd edition. 736 pp. 309 illustrations. St. Louis: C. V. Mosby Co. 1921. Price, $8.50.

Prostitution in the United States. Vol. I. Prior to the Entrance of the U. S. into the World War. By Henry B. Woolston, Ph. D. New York: The Century Co., and the Bureau of Social Hygiene. 1921. Price, $2.50.

Benign Stupors—A Study of a Pneumanic-Depressive Reaction Type. By August Hoch, M. D. 284 pp. New York: The MacMillan Co. 1921. Price, $2.50.

Bacteriology. By Estelle D. Buchanan, M. S., and Robert Earl Buchanan, Ph. D. Revised edition. New York: The MacMillan Co. 1921.

The Unconscious. By Morton Prince, M. D., LL. D. Second edition, revised. New York: The MacMillan Co. 1921.

Social Aspects of the Treatment of the Insane. By John A. Goldberg, Ph. D., Columbia University, New York. New York: Longmans, Green & Co. 1921. Price, $2.50.

Pitfalls. By A. J. Caffrey, M. D., Milwaukee. Boston: Richard G. Badger: The Gorham Press. 1921. Price, $2.00.

Suggestion and Auto-Suggestion. By Charles Boudouin, Professor at the Jean-Jacques Rousseau Institute. New York: Dodd, Mead & Co. 1921.

Vice and Health. By John Clarence Funk, M. A., LL. B. 174 pp. Philadelphia and London: J. B. Lippincott Co. 1921. Price, $1.50.

Essentials of Laboratory Diagnosis. Designed for students and practitioners. By Francis Ashley Faught, M. D., formerly Director of the Laboratory of the Department of Clinical Medicine and Assistant to the Professor of Clinical Medicine, Medico-Chirurgical .College, etc., Philadelphia, Pa. Eleven full-page plates (four in colors) and seventy-eight text engravings. Seventh Revised and Enlarged Edition. F. A. Davis Company, Publishers, Philadelphia, Pa. 1921. Price, $4.50.

1920 Collected Papers of the Mayo Clinic, Rochester, Minn. Octavo of 1392 pages, 446 illustrations. Philadelphia, and London: W. B. Saunders Company. Cloth, $12.00, net.

Diseases of the Skin. By Henry W. Stelwagon, M. D. Ninth Edition revised with the assistance of Henry K. Gaskell, M. D., attending Dermatologist to the Philadelphia General Hospital. 1313 pages, 401 text illustrations and half-tone plates. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $10,00, net.

History of Medicine, with Medical Chronology, Suggestions for Study and Bibliographic Data. By Fielding H. Garrison, M. D., Lt.-Colonel, Medical Corps, U. S. Army, Surgeon General's Office, Washington, D. C. Third Edition, Revised and Enlarged. Octavo of 942 pages. 257 portraits. W. B. Saunders Company, Philadelphia and London, 1921. Cloth, $9.00, net.

The Spleen and Some of Its Diseases. By Sir Berkeley Moynihan, Leeds, England. 129 pages, 13 full page diagrams, Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $5.00, net.

Surgical Anatomy. By William Francis Campbell, M. D., Surgeon-in-Chief at Trinity Hospital, Brooklyn, N. Y.; Sometime Professor of Anatomy and Professor of Surgery, Island College Hospital. Third Edition, Revised. 681 pages, 325 original illustrations. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $6.00, net.

Bacteriology — General, Pathological and Intestinal. By Arthur Isaac Kendall, B. S., Ph. D., Professor of Bacteriology, Northwestern University Medical School, Chicago. 2nd edition. 700 pp., 99 engravings, 8 color plates. Philadelphia and New York: Lea & Febiger. 1921. Price, $6.00.

Diseases of the Digestive Organs with Special Reference to Their Diagnosis and Treatment. By Charles D. Aaron, Sc. D., M. D., F. A. C. P. Professor of Gastroenterology and Dietetics, Detroit College of Medicine and Surgery. 3d edition, revised. Philadelphia and New York: Lea & Febiger. 1921. Price, $10.00.

Insanity and Mental Deficiency in Relation to Legal Responsibility.—A Study in Psychological Jurisprudence. By Wm. G. H. Cook, LL. D. (London). New York: E. P. Dutton Co. 1921. Price, $4.00.

Diseases of the Skin. By Richard L. Sutton, M. D., Professor of Diseases of the Skin, University of Kansas School of Medicine, Dermatologist to the Christian Church Hospital. 969 illustrations, 11 colored plates. Fourth edition, revised and enlarged. St. Louis: C. V. Mosby Co. Price, $9.50.

The Glands Regulating Personality, A Study of the Glands and Internal Secretions in Relation to the Types of Human Nature. By Louis Berman, M. D., The MacMillan Co., New York. 1921.

Mysticism, Freudianism and Scientific Psychology. By Knight Dunlap, Professor Experimental Psychology, Johns Hopkins University. St. Louis: C. V. Mosby & Co. 1920. Price, $1.50.

The Practical Medicine Series. Vol. II. General Surgery. Edited by Albert J. Ochsner, M. D., LL. D. Series 1921. Chicago: The Year Book Publishers. Price, $2.50. **Vol. III. Eye, Ear, Nose and Throat.** Edited by Wood, Andrews and Shambaugh. Price, $1.75.

Nostrums and Quackery. Vol. II. Illustrated. 832 pp. Chicago: The American Medical Association. Price, $2.00.

BOOK REVIEWS

Essentials of Laboratory Diagnosis. Designed for students and practitioners. By Francis Ashley Faught, M. D., formerly Director of the Laboratory of the Department of Clinical Medicine and Assistant to the Professor of Clinical Medicine, Medico-Chirurgical College, etc., Philadelphia, Pa. Eleven full-page plates (four in colors) and seventy-eight text engravings. Seventh Revised and Enlarged Edition. F. A. Davis Company, Publishers, Philadelphia, Pa. 1921. Price, $4.50.

This new edition is larger than any of the previous editions, yet it is very compact. The contents are so boiled down as to provide in one book the material which could fill several volumes. The book is divided into fifteen sections and an appendix—the appendix in itself is a gold mine of formulae and tables.

The section on *The Urine* is the most complete and embodies some phases of newest technic. The sections on *Clinical Hematology and Newer Methods of Blood Examination* are up to the minute, especially in regard to blood chemistry. The section on *Determinations of the Functions of the Stomach* also has some new methods of interest. The section on *Bacteriologic Methods* is less complete than the others but this being such a large field to cover in a limited space, one must necessarily consult a book devoted entirely to the details of that subject. Throughout the book one finds excellent engravings, especially of the newer pieces of special apparatus for blood chemistry, etc. In considering the book as a whole, conciseness and simplicity are the outstanding features which make it recommend itself to the busy physician or the less experienced worker. M. B. W.

Epidemiology and Public Health. In three volumes. By Victor C. Vaughan, M. D., LL. D. Vol. I—Respiratory Infections. 688 pp. C. V. Mosby Co., St. Louis. 1922. Price, $9.00.

The medical world has long awaited a work of this character by its distinguished author. Dr. Victor Vaughan, for years dean and professor of hygiene in the medical school of the University of Michigan, former president of the American Medical Association and chairman of the division on medical science of the National Research Council, needs no introduction to the medical profession. He has been assisted in the preparation of these volumes by Henry F. Vaughan, commissioner of health of the city of Detroit, and George T. Palmer, epidemiologist of the detroit department of health.

Volume I of the series covers albuminal diseases, pollinosis; the acute coryzas; the pneumonias; measles; smallpox; chickenpox; diphtheria; scarlet fever; mumps; whooping cough; influenza; tuberculosis; leprosy; cerebrospinal meningitis; poliomyelitis; glanders and a concluding chapter on weather and disease. There are 83 illustrations. This work will stand out as a landmark in medical literature for many years to come.

Clinical Diagnosis. By Charles Phillips Emerson, A. B., M. D. 5th edition. 156 illustrations. J. B. Lippincott Co., Philadelphia and London.

Dr. Emerson's splendid work has now reached its fifth edition. It is a textbook of clinical microscopy and clinical chemistry for medical students, laboratory workers and practitioners of medicine. It has been ten years since the last edition of this book appeared and the fifth edition has been entirely rewritten and reset. Compared with the older editions, it is certainly an entirely new work. The book is written especially for the student of laboratory technique and the physician who, through interest or necessity, does his own laboratory examinations.

The author, through this work and through his years of association at Johns Hopkins University and the Indiana University School of Medicine, is too well known to need an introduction in this review. The work meets every requirement of a text of its kind.

Physical Diagnosis. By W. D. Rose, M. D. 2nd edition. 736 pp. 309 illustrations. C. V. Mosby Co., St. Louis. 1921. Price, $8.50.

Dr. Rose has prepared for the medical student and busy practitioner a brief work on the principles of physical diagnosis together with the physical findings in the more common diseases of the respiratory and circulatory systems especially. He has also included the principal diagnostic signs referable to the head, neck and limbs together with a minimum examination of the nervous system. The text of the present edition has been largely rewritten and the intimate correlation of anatomy, pathology and physical science have been emphasized. Additional space has likewise been allotted to the physical principles underlying the various physical signs which are generated within the thorax and abdomen in health and in disease.

The work is divided into four parts—the thorax; the abdomen; the head, neck and extremities, and the examination of the nervous system. It is profusely illustrated and is recommended as a very satisfactory work of the abbreviated type.

Vice and Health. By John Clarence Funk, M. A., LL. B. 174 pp. J. B. Lippincott Co., Philadelphia and London. 1921. Price, $1.50.

The author of this work is director of the bureau of Protective Measures of the Pennsylvania state department of health and the book is intended as a practical guide to certain phases of one of the most important municipal problems and one which has received special earnest attention and study since the war. It is written for the lay reader who has become concerned in the suppression of vice and the reduction in the incidence of venereal disease but who is quite ignorant of many of the necessary details essential to a successful attack.

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Prostitution in the United States. Vol. I. Prior to the entrance of the U. S. into the World War. By Henry B. Woolston, Ph. D. The Century Co., and the Bureau of Social Hygiene, New York. 1921. Price, $2.50.

The plans for the study of prostitution in the United States were made before our country entered the world war and before many important agencies, which were later developed by the government, had begun to function. The greater part of the field work was done in the first half of the year 1917 and the present volume deals with investigations conducted at that time. A second volume in course of preparation will deal with the influence of the world war on prostitution in the United States.

The author of this work and his assistants personally investigated conditions in forty cities in the United States and the present work is the result of this investigation together with that of other field workers and all manner of data contained in official reports. It is a splendid study of the problem and gives much needed information.

Benign Stupors—*A Study of a Pneumanic-Depressive Reaction Type.* By August Hoch, M. D. 284 pp. The MacMillan Co., New York. 1921. Price, $2.50.

The late Dr. Hoch, when director of the Psychiatric Institute of the New York State Hospitals, began the Psychiatric research his predecessor Adolf Meyer had developed. He spent many valuable years of his life working out the essentials of the stupor reaction, describing it not only in its psychiatric bearing, but also as a life reaction. In his work on this subject, he has broken away from the set, fixed terms used in the past to label symptoms and has separated the different reaction types in order to discover which are recoverable and which are chronic or progressive.

The importance of this work can not be over-estimated and it should be in the library of everyone interested in psychiatry. It is indeed unfortunate that in 1917, when Dr. Hoch through ill health was forced to resign from his official duties and retired for the purpose of adding to psychiatric literature the fruits of his long experience, the final collapse ended his brilliant career. He has left us a work which will stand as a classic in psychiatric literature for many years to come.

The Unconscious. By Morton Prince, M. D., LL. D. Second edition, revised. The MacMillan Co., New York. 1921.

This has been one of the most popular works of its distinguished author. In it, he presents the latest results of his researches and experiments in the realm of the subconscious. The book is written in as simple language as its subject matter will permit, with the purpose of deriving a volume which will be read with profit by those who have not had special training in the field, as well as by the student of psychology. The work is designed to be an introduction to the subject of abnormal psychology and the author has avoided an attempt to develop any particular school but rather to present the knowledge already gained and lay a foundation which can be built upon by any school for the solution of problems of special pathology. It will prove most interesting and valuable reading to the medical practitioner or the lay reader interested in psychology.

Social Aspects of the Treatment of the Insane. By John A. Goldberg, Ph. D., Columbia University, New York. Longmans, Green & Co., New York. 1921. Price, $2.50.

This work, which is one of a series of studies in history, economics and public law, edited by the faculty of political science of Columbia University, is based on a study of New York experience. It is written to supply a needed source to which the layman, the social worker, the general practitioner and others could refer when considering matters pertaining to the treatment of the insane. It is the result of several years of active and intensive work and study of matters relating to the insane. Various chapters cover the history of New York's policies, insanity as a community problem, results of state hospital care and treatment, a social survey of 786 admissions to state hospitals, social treatment of the insane and recommendations and conclusions. It is a most valuable study of the greatest of social problems.

Suggestion and Auto-Suggestion. By Charles Boudouin, Professor at the Jean-Jacques Rousseau Institute. Dodd, Mead & Co., New York. 1921.

This is a physiological and pedagogical study based on investigations made by the new Nancy school. Contemporaneously with the idea of psychoanalysis, the theories of the new Nancy School, more akin to the French spirit, lead us into the little known domain of the subconscious. The work deals with auto-suggestion, the education of the will, the force of thought, self control, etc. It is written with all the charm of the French school and is admirably translated. It is one of the most interesting psychological works of recent years and is recommended to the physician and the lay reader interested in psychological study.

Pitfalls. By A. J. Caffrey, M. D. Richard G. Badger: The Gorham Press, Boston. 1921. Price, $2.00.

A book of medical stories by a Milwaukee man well known to all of us is indeed of interest. The author states that in the writing of the book he has had but one object in mind, of bringing before the minds of medical men as well as the public at large the many pitfalls into which they are ever in danger of being precipitated. The chapters, he explains, are taken from notes of twenty years of experience and, barring some frills, are true to life, showing the many peculiar incidents, tragic and otherwise, which crop up in the life of a doctor. He concludes his preface with, "As to the author's connection with what is written, all that may be said is that they are 'twice told tales'." These are real "doctor" stories and present a very human side of the practice of medicine. Dr. Caffrey's many friends will be interested in his "first-born".

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ORIGINAL ARTICLES.

THE USE OF ANTI-SERUM IN STREPTOCOCCUS SEPTICAEMIA.*

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In a search of the literature on streptococcus septicaemia, three striking facts are noted: first, the scarcity of case reports; second, the rarity of recovery, and third, the random way in which antisera are used. It is because of these factors that I wish to emphasize the necessity for intensive treatment.

The following case is illustrative of this method:

Mrs. R. H., aged 23, housewife. Four months prior to admission she had gone through a normal labor and an uneventful puerperium and had nursed the baby up to the onset of the present illness. Since the termination of pregnancy there had been a tendency to constipation and an occasional dull pain in the lower right quadrant of the abdomen after exertion; otherwise the past history was unimportant.

About 2. A. M. of the day of admission, December 17, 1920, the patient was awakened with a diffuse abdominal pain, which gradually grew worse. About 10 A. M. she became nauseated and vomited. In the middle of the afternoon the pain became localized in the right lower quadrant and increased in intensity during transit to the hospital.

Physical Examination: The patient was in severe pain with an anxious expression on her face. The pulse was 128 and of poor quality. Temperature was 101.8, respirations were 24. Heart and lungs were negative.

The entire abdomen was rigid, with tenderness in the right lower quadrant. Pelvic examination was negative. A diagnosis of acute appendicitis was made. Operation at 4:50 P. M. On opening the abdomen a small quantity of straw colored fluid was found free in the peritoneal cavity. There was considerable fibrin around the appendix, but very little swelling of the appendix itself. The appendix was removed.

December 18,1920—Patient vomited persistently throughout the day. Pulse rapid and weak. Digalen M. vii hypo every four hours. Wbc. 15,700; Urine 1030, acid, albumin and sugar present, few wbc present.

December 19—Patient complained of sore throat and aching over entire body. Urination was painful. Wbc 10,600, Urine 1022, acid, albumin present, no sugar, coarsely granular casts.

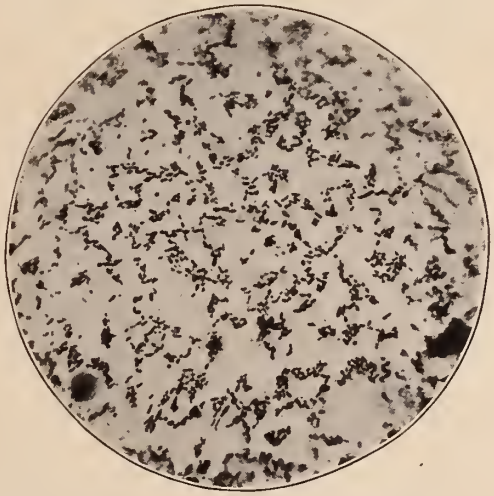


Fig. I. Organism isolated from the blood stream.

December 20—Very small amount of drainage from wound. Blood culture taken. Wbc 2,800.

December 21—Blood culture showed a streptococcus. Wbc 2,850. At 6 P. M. a second blood culture was taken.

December 22—The second blood culture showed the same organism. The organism from the previous day had been plated on blood agar and found to produce colonies typical of streptococcus viridans. Wbc 7,600. Patient irrational at times. Respirations rapid. Pulse rapid,weak, and irregular. At 3 P. M. 10 c.c. of leucocytic extract was given subcutaneously. The value of the leucocytic extract was deemed nil in this type of case and it was agreed to start intensive treatment with anti-

*Read before the Wisconsin State Medical Society, Milwaukee, September 8, 1921.

streptococcus serum even though the case seemed hopeless. At 3:50 P. M. 50 c.c. polyvalent anti-streptococcus serum was very slowly given intravenously with no reaction.

December 23—At 4:30 A. M. 50 c.c. anti-streptococcus serum was given intravenously. Patient seemed a little better. Wbc. 10,200. At 4:25 P. M. 50 c.c. antiserum given intravenously. Wbc 9,300. Third blood culture taken. At midnight 50 c.c. of antiserum given intravenously.

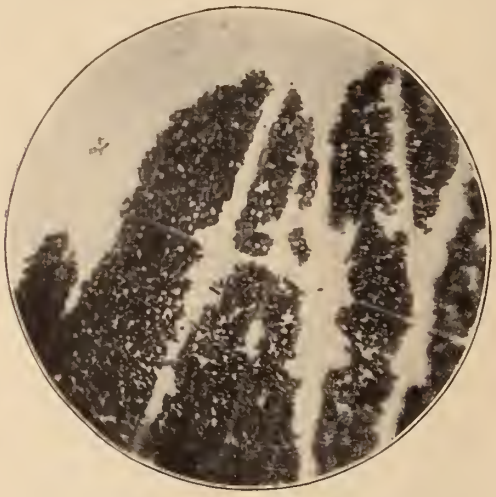


Fig. II. Organism isolated from abscess cavity.

December 24—Third culture positive for strep. viridans. At 10 A. M. 50 c.c. antiserum given intravenously. Wbc 13,200. The urine still showed albumin present and many coarsely granular casts. Patient appeared better. Pulse 120: better quality. Fourth blood culture taken.

December 25—Fourth blood culture positive for strep. viridans. Temperature during the past three days showed a downward trend. Wbc 15,400. At 4 P. M. 50 c.c. antiserum given intravenously.

December 28—Patient complained of pain in right shoulder and left hip. Methyl salicylate applied. As the temperature was gradually coming down the antiserum was discontinued. Temperature reached normal for the first time. Wbc 18,000. Fifth blood culture taken.

December 29—Fifth blood culture negative. Patient seemed much better. Wbc 20,200. Very slight drainage from wound. Small tender swelling left buttock.

December 31—The temperature during the past three days showed a stepladder rise. Abscess left buttock incised and pus cultured. Wbc 23,800. Patient developed a typical urticarial eruption, quite generalized.

January 1, 1921—Culture of pus from abscess on left buttock showed strep. viridans.

January 3—Sixth blood culture was positive for strep. viridans. 10 A. M. 50 c.c. antiserum intravenously. Immediate typical severe anaphylactic reaction. Foot of bed elevated. Adrenalin chloride M x every five minutes. Inhalation of ammonia. At 10:30 A. M. condition was better. Temperature dropped at least 1.8 degrees during the reaction. At 10:35 A. M. patient had severe chill lasting 30 minutes. Still some difficulty in breathing. At 11:05 A. M. temperature was 101.4°. At 2 P. M. patient was resting quietly. Wbc 44,000. At 8:20 P. M. 1 cc. antiserum was given subcutaneously. No reaction in one hour. At 9:25 P. M. 9 cc. antiserum was given intravenously. No reaction.

January 4th—At 9:25 A. M. 50 cc. antiserum subcutaneously. 7 cc. antiserum instilled into abscess wound on buttock. At 8 P. M. 50 cc. of antiserum was given intravenously.

January 5th—At 1 P. M. 50 cc. antiserum intravenously. Slight reaction. Stinging sensations, some tightness of the chest. Adrenalin chloride M x hypo. Antiserum instilled into abscess wound on buttock. Seventh blood culture taken. At 11:50 P. M. 50 cc. antiserum intravenously.

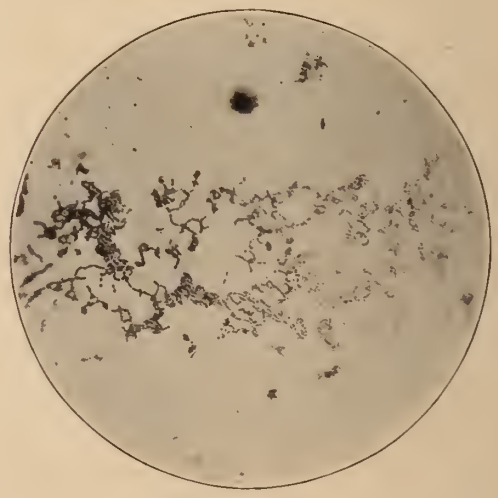


Fig. III. Organism isolated from periapical abscess of tooth.

January 6th—Seventh blood culture positive

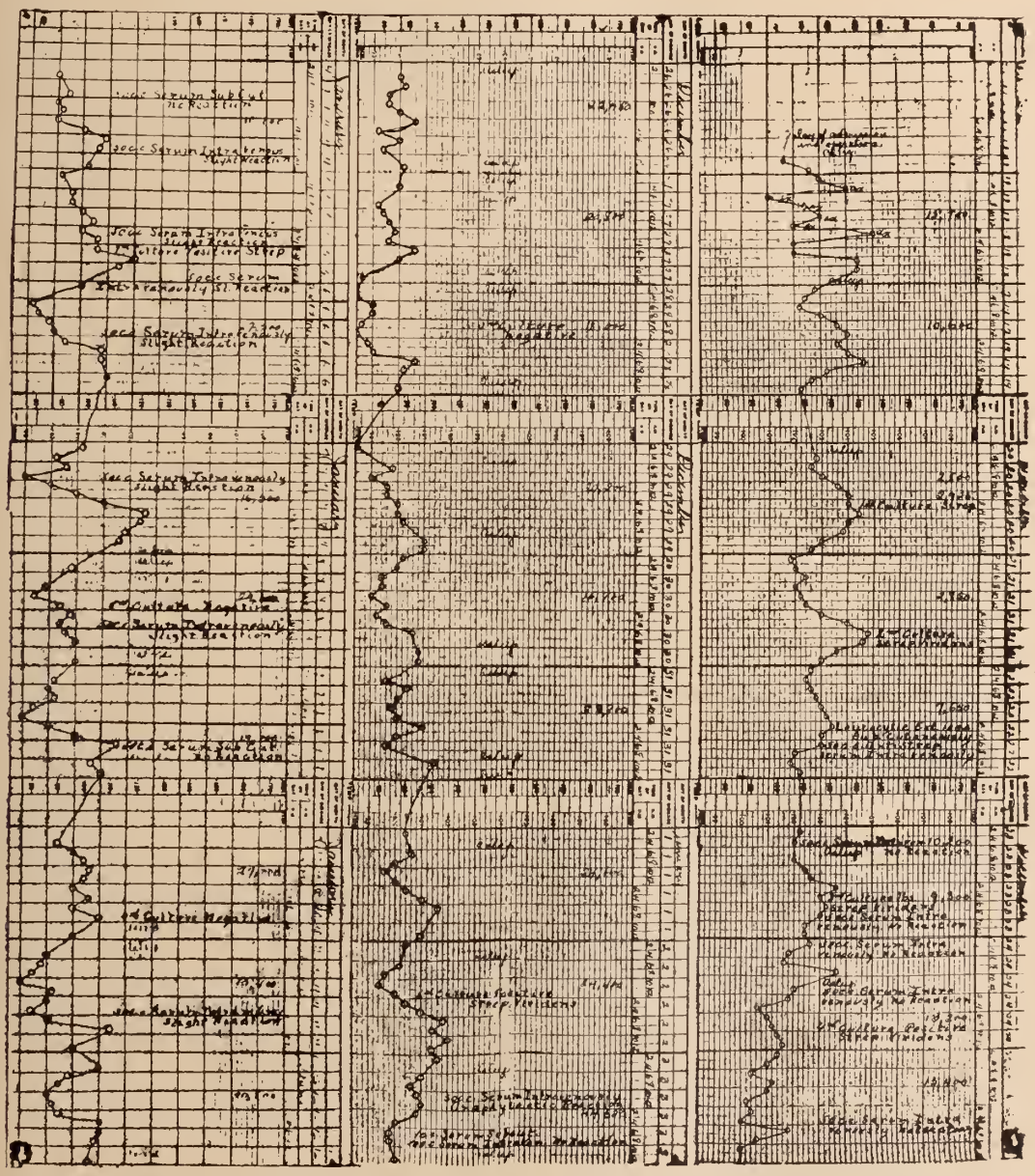
for strep. viridans. At 1:50 P. M. 50 c.c. antiserum intravenously.

January 9th—50 cc. antiserum given daily on the 7th, 8th, 9th. The eighth blood culture was taken.

January 10th—Eighth blood culture was negative.

January 16th—The tenth blood culture was taken on the 15th and was negative. Patient up in wheel chair and out on sunporch for 1½ hours. Appetite which had been poor was improving.

January 17th—Five cc. antiserum subcutaneously to prevent hypersusceptibility. Examina-



January 11th—The ninth blood culture also was negative. 50 cc. antiserum given intramuscularly. Patient's general condition fair. The urine showed many leucocytes which probably came from a vaginal discharge.

tion of heart negative. The leucocytic count reremained high. There was a slight purulent discharge from the wound.

January 21st—Condition somewhat improved. Less marked variation in the temperature. Urine

entirely clear. Still a purulent discharge from the abdominal wound.

January 26th—Eleventh blood culture negative. The white count has been gradually dropping. Very little drainage from the abdominal wound.

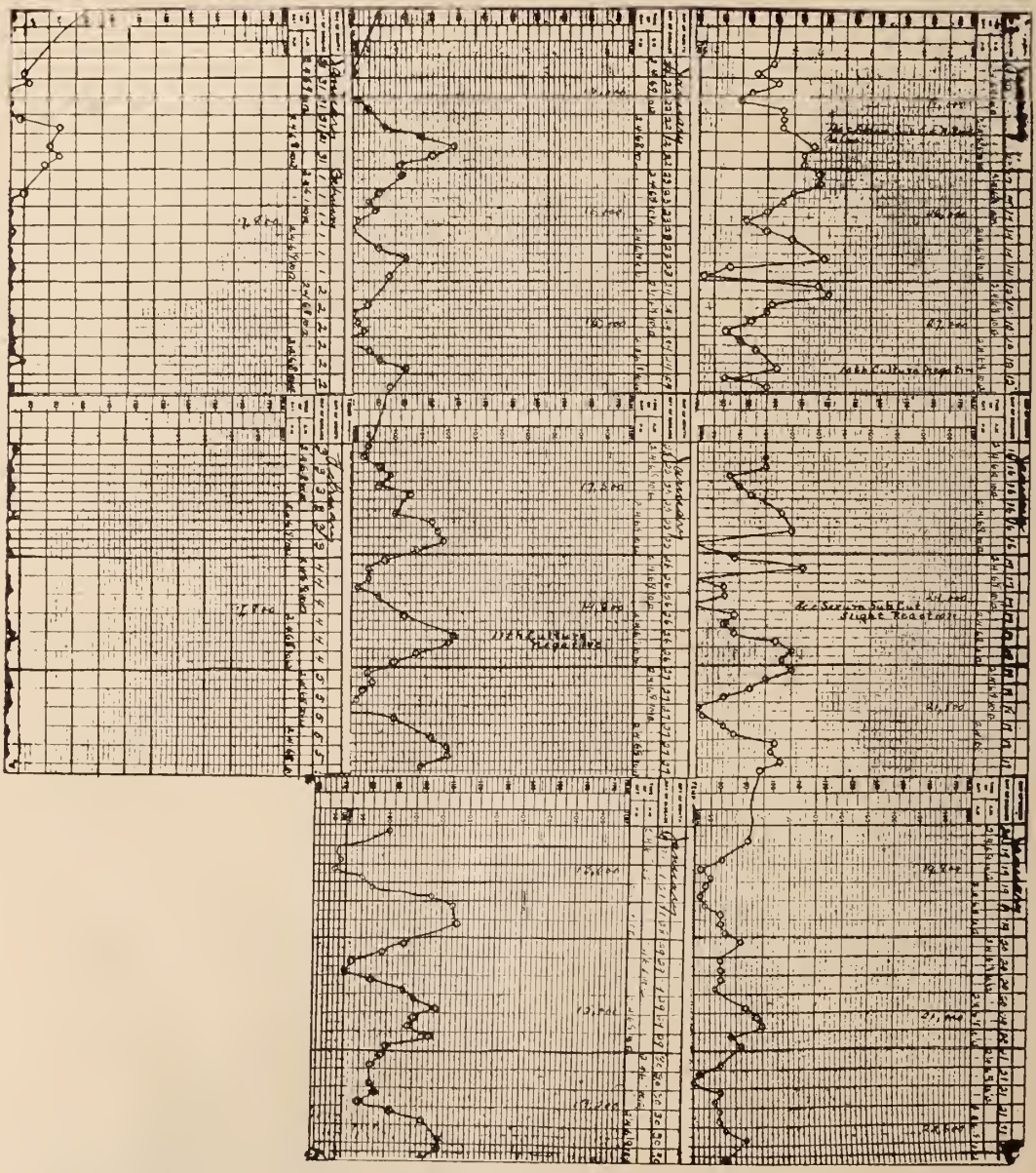
January 31st—Small abscess at lower angle of wound incised. Pus culture cultured and showed mixed infection. Tender swelling left thigh.

February 6th—Abscess on left thigh incised and cultured. A 24-hour culture showed strep. viridans in pure culture. Temperature has remained normal for six days. White count normal. Urine negative. Patient's general condition good.

February 14th—Patient improving rapidly. Walked about room.

February 17th—Discharged.

In search for a possible primary focus of infection, an X-ray examination of the teeth was made which revealed definite periapical infection in six. On the 24th of April under gas anesthesia, three teeth were extracted and a culture from the pus sac showed strep. viridans. On account of this finding, to safeguard the patient further, we deemed it advisable to remove all devitalized



teeth, and all the uppers, as there was a marked degree of dental caries, which would have necessitated their devitalization. On the 11th of May under block anesthesia of novocain a partial alveolectomy was done removing seven teeth. No reaction followed.

A physical examination on May 25th was negative except for the slightest possible trace of albumin in the urine. The condition of the patient's heart was of special interest as a large percentage of cases of streptococcus septicaemia develop an endocarditis. The heart was entirely negative, as it had been throughout the disease. She had regained her normal weight and was feeling perfectly well and able to take care of her household duties.

On the first of June, under gas anesthesia, the remaining ten suspicious teeth were removed with no reaction.

DISCUSSION.

It is worthy of note that large doses of the antiserum were used in this case with no manifest injury to the patient. The total amount of the antiserum used was approximately 825 c.c. of which amount 300 c.c. were given intravenously between the dates of December 22nd and 25th. Then between the dates of January 3rd and January 11th the major portion (510 c.c.) of the remaining amount was administered. The amount given between January 11th and 17th (15 c.c.) was given purely for the purpose of avoiding a repetition of hypersusceptibility with a possible second anaphylactic reaction. The only inconvenience encountered in the administration of the repeated large doses was the difficulty of finding veins which were accessible without incision and which had not become thrombosed due to previous puncture.

A serum rash appeared on December 31st, nine days after the first and six days after the last antiserum injection. The rash caused a moderate amount of discomfort, lasted for about four days, was urticarial in type, and showed several alternating periods of what seemed to be fresh outbreaks and rapid disappearance.

The anaphylactic reaction which was obtained on January 3rd was very characteristic. The reaction resulted from the intravenous injection of at least 45 c.c. of antiserum, and the first symptoms occurred before the needle had been withdrawn from the vein. The reason why the reaction was not more severe than it was may be ascribed to the fact that the intitial or sensitizing dose consisted of repeated injections of considerable quantities of the antiserum at short intervals producing a condition of incomplete antianaphylaxis or partial immunity to the antiserum injected on January 3rd. Nine days elapsed from the time of the last initial dose up to the time of the reaction. The reaction was characterized by the patient becoming somewhat jovial, then complaining of "feeling funny", followed by a flushing of the face, marked inspiratory efforts, fullness of the chest, cyanosis, incontinence of urine and feces, and a sharp fall of the body temperature amounting to at least 1.8 degrees. Adrenalin chloride was used to relieve the respiratory embarrassment. Administration of the following doses of antiserum gave only slight reactions, and it is possible that these symptoms may have been due to patient's apprehensiveness of a second reaction.

Anderson and Foost[1] state that hypersusceptibility to a foreign proteid consists of an increase in the normal power of assimilating this protein, especially an increase in the rapidity of the reaction. This is due to the formation of a specific antibody the action of which on its antigen quantitative and probably primarily proteolytic. Anaphylaxis is a step toward immunity, which is conceived as an increased capacity for safely and rapidly eliminating the specific antigen proteid.

The organisms which were six times isolated during the disease from the blood stream, and from two abscesses located on the left hip and left buttock, were identical morphologically and culturally. The media used for the growth of the organisms was glucose bouillon and blood agar plates.* The organisms were gram positive, diplococcal in arrangements, and appearing as if each coccus had been stretched out along the longitudinal axis passing through both cocci. There was no evidence of chain formation. The organisms were insoluble in bile, and on the blood agar plates showed consistently an area of green pigmentation around each colony. From these findings we felt justified in believing that the organism was a streptococcus and a member of the viridans group.

On April 24th, about two months after the patient had recovered sufficiently to leave the hospital, it was thought best to extract three upper front teeth which showed periapical rarefaction on X-ray. These teeth were carefully extracted to avoid undue mouth contaminations, and the apical material cultured on blood agar plates. These cultures showed colonies of green pigment producing Gram positive cocci, one in pure culture, which were small, spherical and arranged in chains averaging about five cocci each. Although the organisms obtained from the blood stream, the abscesses and the teeth were not proven to be of the same strain in the streptococcus viridans group, it is only reasonable to suspect the teeth of being the foci from which the organisms disseminated to produce the very severe generalized infection.

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*The agar base of the blood plates used was vitamine agar which has the following composition:

Chopped beef heart or steak	500 gms.
Distilled water	1000 c.c.
Agar	16 gms.
Peptone	10 gms.
Sodium Chloride	5 gms.
Egg	1

Whole titrated to P_H 7.6.

It is well known that the diminution of leucocytes in the circulating blood—or even the failure of these cells to increase in the circulation in the course of such diseases as pneumonia or general infections with straphylococci or streptococci—is seriously prognostic of fatal outcome.

The conditions here observed point strongly to the existence of substances of negative chemotactic influence which protect the bacteria, not from phagocytosis itself, but from the necessary forerunner of phagocytosis, the approach of the leucocyte. It is necessary to draw this distinction since these phenomena are not merely, as often believed, "antiopsonic", but in truth largely "antichemotactic". Gabritchewsky, who investigated this subject extensively, has classified various substances according to their positively, negatively or neutral chemotactic activities. It is not necessary to recapitulate these, but it is interesting to note that he found that some substances which were positively chemotactic in certain concentrations became neutral or even negative when the concentration was altered.

The case under consideration showed a leucocyte count of 15,700 on December 18th, the day after admission to the hospital; 10,600 on December 19th, 2,800 on December 20th and 21st; and 7,600 on December 22nd, the date of the first antiserum injection. This fall of leucocytes may have occurred on account of the bone marrow depression due to the increasing concentration of the circulating endotoxins of the streptococcus which were constantly being liberated on destruction of the earlier formed phagocytes; and it occurred in spite of the fact that the blood volume was being persistently decreased by frequent vomiting and by failure of the patient to retain the fluids given by proctoclysis. Since the antiserum, in large doses, acted favorably in elevating the leucocyte count and in improving and finally effecting a complete cure of the patient without complications or sequellae, it would appear that the antiserum had not only a chemotactic influence on the leucocytes, but also an opsonic influence on the leucocytic ingestion of the bacteria.

It was our intention to determine by further laboratory work several of the immunological characteristics of the organisms in the case, but this we were unable to do because of an accident which destroyed the cultures.

From experimental evidence "Bordent and Besredka[2] conclude that potent antistreptococcus serum stimulates the phagocytes, because of the greatest increased local polynucleosis and phagocytosis, in the presence of immune serum as compared with normal serum, but it is exceedingly doubtful whether this is the complete explanation. The observers mentioned did not consider the possibility that the serum may directly influence the bacteria. Neufeld and Rimpau have found that the treatment of leucocytes with antistreptococcus serum does not enable them to take up virulent streptococci when suspended in the normal serum. But the treatment of virulent streptococci with immune serum, then washing in NaCL solution, and adding them to a suspension of leucocytes in normal serum, gives good phagocytosis. This experiment, which Dr. Ruediger and Dr. Hektoen have repeated with the same result, shows that the immune serum acts on the virulent cocci, and in some manner changes them in such a way that the leucocytes can take them up. The demonstration that antistreptococcus serum causes phagocytosis of virulent streptococci, however, does not prove that the serum owes its protective action to this effect. For one thing, it must be shown that virulent streptococci are destroyed within or by the phagocytes, that phagocytosis is an essential step in the destruction of streptococci. This has been done *in vitro* by Denys, who found that in mixtures of normal rabbit serum, and virulent streptococci there was little or no reduction of bacteria, but if immune serum was added in place of the normal, then an active phagocytosis ensued, with complete destruction of the cocci.

In the peritoneal exudate of mice, examined at short intervals, one finds marked phagocytosis in the animals injected with virulent streptococci plus antiserum, while in the controls there is little or no phagocytosis and rapid increase in the number of the cocci."

Contrary to a common finding in similar cases, no endocarditis developed during the disease and a thorough physical examination three months after the patient had been discharged revealed no cardiac changes of any sort. The omission of the endocarditis, in spite of the fact that the cocci had been isolated from the blood stream on six different days, would seem to indicate that efficient phagocytosis was actively hindering the formation of lesions in the areas of adequate circulation. To be sure there were marked kidney disturbances during the earlier part of the disease, but these have practically disappeared and the kidney function is now back to average normal. The two abscesses which developed during the disease were located at points of needle trauma and bed pressure.

This method of serum therapy has been used successfully in two other cases, one a boy aged 8 with a streptococcus peritonitis following tonsillitis and the other a man with a streptococcus septicaemia following an infected toe.

CONCLUSIONS.

1. Polyvalent antistreptococcus serum is indicated in a proven case of streptococcus septicaemia.
2. In cases where the antistreptococcus serum is indicated it should be given intravenously in large doses at twelve hour intervals.
3. The use of the antiserum should be controlled by blood culture findings.
4. It is better to persist in the use of the antiserum past the point of cure than to stop its use prematurely.
5. Large doses of the antiserum have produced no harmful effects.

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[2]Quoted by Hektoen, Ludwig—Practical Treatment—Musser & Kelly. Vol. I. P. 285. W. B. Saunders Co., Phila. 1917.

THE EFFECT OF OCCLUSION OF THE CORONARY ARTERIES ON THE HEART'S ACTION AND ITS RELATIONSHIP TO ANGINA PECTORIS.*

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One might think that the subject of cardiac pain and coronary artery disease was almost threadbare, for angina has been talked of and written about for years and has become so familiar as to be commonplace. But when a careful search is made for very exact information concerning the actual cause of precordial pains, their importance, or indeed their precise relation to diseases of the heart muscle, the coronary arteries or the aorta, this exact information is meagre, or incomplete.

Since pain in the region of the heart is a symptom that quickly attracts the attention of the patient, and frequently arouses, not only his anxiety, but that of his physician, it behooves us to take stock from time to time of our knowledge of this condition; to realize our limitations in interpreting the symptoms and to add what grains of information that we may possess in an effort to elucidate more clearly its causes or its meaning.

Undoubtedly there are many patients who have severe precordial pain upon exertion and yet have no organic disease of the heart. This is particularly true of the young adults with irritable heart or disordered action of the heart. The precordial pain in these patients is not a symptom of grave circulatory disease threatening life, and though we appreciate the insignificance of this pain, we are highly uncertain as to its origin. The precordial pain of mitral stenosis, that is so often localized in the apical region has an entirely different significance, and though it is associated with an organic heart lesion, it may subside, as Mackenzie says when auricular fibrillation sets in and dyspnoea appears on exertion. The pain of mitral stenosis is no more a warning of sudden death than is the pain of irritable heart. In aortitis and particularly that due to syphilis, the substernal pain which frequently radiates to the neck or to the left arm is a signal of danger ahead and these patients may without further warning drop dead.

It has usually been supposed that the serious forms of precordial pain were dependent upon disease of the coronary arteries for it has often been found at the autopsy upon patients dying of angina pectoris that the coronary arteries were more or less diseased.

From the time of Huchard, however, the French have emphasized the importance of disease of the aorta itself as a cause of angina pectoris, and among the English who have contributed so much to this important subject, Sir Clifford Allbutt upholds most strongly the view that the common cause of angina pectoris is disease of the wall of this great vessel.

With the more careful studies of the syphilitic form of aortitis which have been made in the last ten years our information has been somewhat increased as regards the pain associated with this affection. We now know from the careful observations of Mackenzie and Head that pains connected with disease of the heart and aorta are referred through reflex impulses through the spinal segments to the peripheral nerves, and, therefore, are distributed to definite regions of the body which are often far removed from the seat of origin in the diseased organ. It is also known that the walls of the aorta, as well as of the heart, are well supplied with nerves which when irritated may arouse serious reflex phenomena. The physiological studies of Francois Frank, rarely quoted, showed well how paroxysms of dyspnoea might follow stimulation of the root of the aorta in dogs. Thus the anatomical and physiological mechanisms are at hand, to allow the transmission of stimuli from the root of the aorta to the spinal cord and one can readily conceive that some of these impulses might result in pain.

The pain in syphilitic aortitis is usually situated high in the chest, beneath the sternum and sometimes the manubrium. With great frequency it radiates to the left shoulder, the inner surface of the arm, the forearm or actually to the fingers. Occasionally the radiation is up the left side of the neck, into the jaw or teeth or even to the face. The attacks are often classic of angina pectoris and sudden death is not infrequent. The fact that the syphilitic process usually affects the root of the aorta and often produces in this situation narrowing of the mouths of the coronary arteries has led

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many to believe that interference with the coronary circulation is the direct cause of angina pectoris in syphilitic aortitis. It is indeed difficult in such cases to disregard a possible coronary stenosis, but there is considerable evidence to show that this is not the cause of anginal pain in all cases of syphilitic aortitis for typical cases of angina pectoris occur in syphilitic aortitis without the slightest involvement of the coronary arteries. In many cases, however, disease of the aortic valves gives rise to aortic insufficiency and it is difficult under these circumstances to exclude as a cause of the pain a sudden stretching of the wall of the ventricles, which Mackenzie considers of such importance as a cause of anginal pain. Although it is difficult to secure proof, the facts and observations at our disposal suggest very strongly that irritation and especially sudden stretching of the walls of the aorta as well as the walls of the chambers of the heart may result in disagreeable sensations varying from slight substernal oppression to agonizing pain.

Occlusion of the coronary arteries whether slow or rapid is in itself a very serious disorder and the recognition of this disease by an analysis of symptoms and physical signs is of utmost importance, not only because the condition forms one chapter in the group of anginas, but because the life of the patient may hang on the diagnosis. The clinical syndrome that characterizes coronary thrombosis has recently received much attention and the excellent descriptions of Herrick have made many of the symptoms and signs of this disorder sufficiently familiar to allow of a probable clinical diagnosis in many instances. The picture in its typical form, however, is not common to observe and it, therefore, is important to add the information that may be gained from careful studies of such cases, especially when an autopsy can be obtained, so that our knowledge of this important disease may be enriched. It has seemed to me, consequently, of value, to bring together a group of such cases for study and analysis and to present a summary of the results at this time.

Many of the autopsies and the pathological work were done by Dr. Von Glahn and some of the electrocardiograms were collected and analyzed by Dr. Richardson.

From 1913 until July, 1921, there were observed at the Presbyterian Hospital, 17 cases of advanced coronary artery disease in all of whom the final diagnosis was made at autopsy. Electrocardiograms were obtained in 9 of the 17 cases.

From the clinical standpoint the cases are fairly sharply marked into two groups, namely, those patients who do not suffer pain, and those who do have pain. There were only four cases that were free from pain. The disease in these cases ran the course of rapidly progressive myocardial insufficiency.

In the second group of 12 cases, there were features of special significance which often were suggestive of some extensive, though rarely sudden damage to the heart muscle. In all of them, pain either intermittent or constant and situated over the precordium and occasionally radiating to the left side or to the left arm, was a prominent feature. In only one was there any definite evidence of disease of the heart valves. This was a case of aortic insufficiency. In three there were thrombi in vessels other than the coronary arteries, one case having suffered from gangrene of the toes due to what was supposed to be thromboangeitis obliterans. In four pericardial friction rubs were heard during the last illness. To illustrate the course of the disease in these patients, I may briefly review one or two of them.

A gentleman, 54 years of age, who had spent much time in Cuba was admitted to the Presbyterian Hospital on June 9, 1921, complaining of an acute gastric disturbance. He had always been extremely healthy but 20 years ago after taking a very difficult and fatiguing horse back ride he had experienced a sharp and severe pain in the left chest that momentarily disabled him. From that time until 4 years ago he had to be quite careful in walking or riding for any extra exertion would bring on an attack of pain. He described the pain as though a band were drawn about his chest in the position of inspiration. He obtained relief by rest, by belching of gas and by holding his chest in the inspiratory position. For 4 years he had been getting progressively worse and his tolerance of exercise had steadily diminished. He had considered that he was suffering from some stomach trouble and had consulted many doctors all of whom told him they could find no abnormality. The present attack set in with violent pain in the epigastrium at 8 o'clock in the evening and immediately after a meal. It was the most severe he had ever had. The pain extended laterally to the sides of both arms. He felt as if he had much gas

on the stomach which he could not belch up. The pain had continued almost unabated during ten days. The patient, when he arrived at the hospital was in much pain. He was slightly obese, was sitting up in bed, was pale, and seemed much prostrated. There was no cyanosis. There were considerable numbers of rales at both bases. The respirations were shallow and slightly increased. The pulse was rapid, 120, and extremely feeble. The blood pressure was only 76/68. The cardiac impulse could not be felt. The heart was enlarged to percussion. The heart sounds were feeble. There was a gallop rhythm but no murmur could be heard. There was no hyperesthesia over the precordial area or over the left arm. The abdomen was soft and not especially tender. The liver was palpable below the costal margin. There was no oedema of the extremities. The impression then was that this patient had had attacks of angina pectoris and was suffering from acute cardiac insufficiency. The possibility of coronary thrombosis was considered. Digifolin was administered immediately and on continued digitalis therapy, diet and rest, his condition improved slightly. As the pain gradually diminished the signs of cardiac insufficiency appeared. There was oedema of the ankles, enlargement of the liver and fluid in the pleural cavities. The gallop rhythm was replaced by a systolic murmur and the blood pressure rose to 110/80. The subsequent course was characterized by a progressive cardiac insufficiency, attacks of dyspnoea, and a few days before his death, the appearance of extra systoles. The pulse ranged between 90 and 120. The electrocardiograms showed various phases of bundle branch block. He died suddenly on the night of March 25th. The history and clinical course seemed to us to justify the diagnosis of coronary artery disease probably with thrombosis.

The autopsy disclosed the most extreme degree of coronary arterio-sclerosis with narrowing of the right artery and complete occlusion 3 cm. from its origin. The left coronary was calcified, the descending branch was occluded at a distance of .5 cm. from its origin and converted into a cord for 3 cm. below this point, while the circumflex branch of the left was calcified and plugged by a thrombus mass at its origin from the main stem. The heart was somewhat enlarged weighing 450 grams. There was the most extreme fibrosis of the walls of the ventricle, particularly of the posterior wall of the left.

This history illustrates the course of events in those cases in which the disease pursues a long course, though the terminal and acute illness may be of comparatively short duration and death itself may come suddenly.

There are instances of coronary thrombosis, however, in which death follows shortly after the first appearance of symptoms, though in this series it was rare and occurred in only two cases.

The following is a characteristic example:

A music teacher, 44 years of age, was admitted to the Presbyterian Hospital on Nov. 20th, 1914, complaining of pain in the pit of the stomach, which he had had for two days. Two nights before admission, after eating in a restaurant, he was seized with a sudden severe pain in both sides of the chest. It extended especially to the left and was more severe on this side. He was somewhat relieved by drinking hot water and belching. The pain recurred off and on since then and at times was terrific. It started in the pit of the stomach and radiated to the left chest. Recently it had been more constant but less intense. He vomited the day before admission. He was in exquisite pain and was relieved by lying on his back. The patient was rather a large man and was somewhat cyanotic, and writhed about in bed. There were a few rales at the bases of the lungs. The apical impulse of the heart could not be seen nor felt. The heart was somewhat enlarged. The sounds were short and sharp. There was a very short systolic murmur at the apex. The rate varied and at times was 150 to the minute, at others only 80. The blood pressure was 98/75. The abdomen was soft, but there was some tenderness in the epigastrium. The liver was just palpable at the costal margin. The temperature was 102 2/5. On Nov. 21st, though the pain was somewhat better, his general condition had not improved and the paroxysms of tachycardia continued. On the 22nd, the pulse remained persistently at 170 and the electrocardiograms showed auricular flutter. He failed rapidly, Cheyne-Stokes respiration appeared, he became pale and cyanotic, the chest pain continued, radiating from the epigastrium across the chest to the left axilla, his extremities were cold and clammy, a pericardial friction rub was heard and he died in collapse on Nov. 26th. The illness was short lasting only 9 days. It was suspected

from the acute onset of excruciating pain with cardiac collapse and tachycardia and from the later development of a pericardial friction rub that the patient might have coronary thrombosis with infarction of the myocardium as a sequel.

The autopsy revealed general arteriosclerosis with sclerosis of the coronary arteries of marked degree causing great narrowing of the lumen in both. In the descending branch of the left coronary there was a fresh thrombus about 1 cm. in length which entirely occluded the lumen. The vessel was besides markedly sclerotic and even where it was not thrombosed the lumen was scarcely permeable. The heart was enlarged and weighed 675 grams. There was a fresh fibrinous exudate over the pericardial surface. The left ventricle seemed to bulge. The cavity was enlarged and in the apex was a soft friable thrombus. The wall of the left ventricle corresponding to the distribution of the descending branch of the left coronary was thin and in places soft and friable. It appeared on section to be an infarct.

This case might be used to typify the classical example of coronary thrombosis and yet the patient was really the only one in the group that presented this picture.

Finally, mention must be made of the single case of coronary embolus in group III.

A summary of these 17 cases, shows that an occlusion of one or more important branches of the coronary arteries by a sclerotic process occurred in 6, occlusion by thrombi always associated with sclerosis in 10, and occlusion by embolus in an otherwise normal coronary artery in one.

In the last case death occurred almost immediately and it seems probable from the reports of occasional instances of rapid and complete occlusion of a left coronary artery which had not previously been diseased, that death usually occurs instantly or within a few minutes after this accident in man.

There were certain features common to the remaining 16 cases. Few patients succumb to this affection before the age of 50. Two patients were 44 and 48 respectively; 8 were between the ages of 50 and 60, five between 60 and 70, and one over 70. All but one presented symptoms of rapidly progressive cardiac insufficiency, and this patient died of carcinoma of the stomach. In most instances the pulse was elevated and in many there was some variety of cardiac irregularity. Occasionally there was fever and sometimes a moderate leucocytosis. Only two patients gave a positive Wassermann reaction. In one of these there was a typical syphilitic aortitis with occlusion of the mouth of the right coronary by this process.

From the survey of these cases and a review of those which have been reported in the literature, it seems likely that we cannot well separate the different forms of coronary obstruction in elderly people, for the symptoms, the signs and the resultant changes in the heart muscle may be the same whether the occlusion is produced by thrombosis or by sclerosis.

Our information concerning the effect of interference with an absolutely normal coronary circulation is derived almost exclusively from experiments upon dogs, and according to the recent work of Porter, of Miller and Matthews and of Smith, the ligation of one or even two branches of the coronary artery is not always fatal. Miller and Mathews tied the ramus descendens sinister without causing death in any of their dogs, and Smith in 11 dogs had a mortality of only 9%. The mortality is much higher, however, when the circumflex branch of the left or the right artery is tied and was 57.54% in Smith's experiments.

In spite of the fact that injections of the coronary arteries of man have shown there are anastomoses between them and that they are not end arteries, it is problematical whether man would survive, as does the dog, sudden occlusion of any large branch of the coronary system. In the few cases recorded of embolus to an otherwise healthy coronary artery or thrombosis of a large branch but slightly affected by sclerosis, death has usually been sudden; these, however, are the very rare occurrences, for as a rule, occlusion occurs in a vessel the lumen of which has already been slowly narrowed by sclerosis and one portion of a vascular supply, already distorted and made irregular by disease is suddenly shut off. Indeed, one is often amazed, in studying these cases of coronary sclerosis at the reduction of the coronary circulation and the serious damage to the myocardium that is still compatible with life.

We must recognize, therefore, that the disease starts actually years before it is usually recognized. In a few cases, as the sclerosis increases insidiously, small branches of the coronary arteries are occluded and even thrombosis may take place until the damage to the myocardium is so extensive that the heart muscle at last is unable to carry on its

work and symptoms of cardiac insufficiency supervene. As a rule, the appearance of these symptoms is rather sudden and unlike many other forms of heart disease, remissions are not common and the progress is rapidly down hill. In these patients there is no preliminary warning of the coming trouble, such as pain, and there may not be any distinguishing features to show that the myocardial insufficiency is dependent upon a diseased coronary circulation.

In another group there are features of such special significance that the clinical picture has attracted the attention of many and especially through the excellent descriptions of Herrick, they have been made familiar to us. The onset of the alarming symptoms is sudden and though the duration of life is short, lasting but a few days or weeks in most cases, a few patients may recover. In this group, pain is a significant feature, and allusion has already been made to the type and the frequency with which it occurs in the precordial area, radiating to the left side of the chest or in the epigastrium or upper abdomen. The intensity and situation of the pain in the epigastrium may even simulate such an acute abdominal condition.

The attack not infrequently follows a meal and, as it may be associated with gaseous eructations or vomiting, is ascribed to some indigestible food. In many instances, the pain is constant and persistent. The patient is prostrated, frequently pale, sometimes slightly cyanotic; the skin may be cold and he may be sweating. The respirations are increased and there are usually rales at the bases of the lungs. The pulse is small and almost always rapid. In many instances, there is tachycardia which may be either persistent or paroxysmal. In the majority of these very acute cases, the blood pressure is unusually low and the systolic may be below 100. The heart is enlarged, the apex often difficult to locate, the sounds are faint and if they are not too rapid a gallop rhythm may be detected or a systolic murmur. Within a day or two of the onset, the signs of cardiac insufficiency make their appearance. Quite regularly, as has been emphasized by Libman, the liver is enlarged, and there is tenderness over it. The rales in the lungs increase, fluid may accumulate in the pleural cavities, dyspnoea increases, the extremities become oedematous. A very important sign indicative of acute infarction of the myocardium, is the appearance of a pericardial friction rub, often localized and sometimes transient. The importance of this sign has recently been well brought out by Gorham. During this period there is usually fever of 100 to 103 degrees and there is often a moderate polymorphonuclear leucocytosis. In its characteristic form the symptom complex is so striking that it can be recognized without much difficulty. Death occurs, as a rule, within a few days to a few weeks, though a few patients with similar symptoms of moderate severity recover.

In the third group, the attack which has just been described is preceded for months or years by at least one premonitory symptom. This premonitory symptom is pain. It is often fleeting in character, sometimes mild, frequently occurs at irregular intervals but partakes of the character of the pain that is experienced during the acute attack and is most frequently induced by exercise or occurs after meals. In many instances, pain is the only premonitory symptom but in others the pain is associated with slight breathlessness or other evidences of myocardial insufficiency.

It is in this group that an excellent opportunity is afforded for an early diagnosis, if we had the criteria at our disposal, and perhaps for the institution of preventive measures that might prolong the cardiac efficiency and the life of the patient. In a certain proportion of cases, the examination at this time shows some enlargement of the heart with perhaps a systolic murmur at the apex. The radial arteries may be palpable and there may be other evidences of peripheral arteriolsclerosis. In a few instances the blood pressure is elevated. A small proportion of patients give a positive Wassermann reaction, though this would cause one to suspect that the pain was connected with a syphilitic aortitis.

In a very fair proportion of patients, however, the most careful physical examination does not elicit any definite signs of disease of the heart and it is in this group that it is most difficult to determine whether or not the myocardium has been damaged by interference with its blood supply or if so to what degree or extent the injury has progressed.

For a more accurate study of such cases, the electro-cardiograph has been employed and it has seemed from recent studies that significant changes may occur in some of the ventricular complexes in angina pectoris and coronary thrombosis that are indicative of disease of the heart muscle.

Lewis found that ligation of a coronary artery in dogs was frequently and rapidly followed by single extra systoles arising in one ventricle or the other. Within one to one and a half hours, there occurred rapid successions of ventricular extra systoles producing attacks of ventricular tachycardia at rates of 300 to 420 beats per minute. In some instances, the ventricles went into fibrillation and the dogs died. Smith has repeated these experiments on dogs, ligating the ramus descendens sinister, the circumflex sinister, the coronaria dextra, and combinations of these three and has confirmed Lewis' observations inasmuch as he finds an early effect of ligation of these vessels ventricular and auricular extra systoles which may be followed particularly after ligation of the circumflex artery by auricular flutter, ventricular tachycardia or ventricular fibrillation. He continued to study the animals that survived and described a definite series of changes in the T wave that he considered characteristic of the effects of coronary occlusion. These consisted in an immediate marked exaggeration of the T wave with its foot point on the R wave and a change to negativity within the first 24 hours. Later there was a gradual reversion to its positive position with a final isolectric or negative position.

Since the publication of these experiments, electrocardiograms have been published from a limited number of cases which were proven to have coronary thrombosis at autopsy or were diagnosed as such from the clinical course of the disease, and in several instances the curves have conformed quite accurately with those obtained after experimental occlusion of the coronary arteries. Hermann reported 6 such cases with 3 autopsies. Electrocardiograms made in four cases, one of which came to autopsy showed ventricular tachycardia. Robinson reports 4 instances of ventricular tachycardia in one of which thrombosis of the coronary artery was proven at autopsy, while in the remaining three it was suspected.

Previously Herrick had recorded a case of coronary thrombosis with autopsy in which electrocardiograms showed changes in the ventricular complex and in the T wave that corresponded almost exactly to those reported by Smith, and Pardee later published one case without autopsy, presenting the same type of electrocardiograms. Pardee felt that it was an electrocardiographic sign which is characteristic of coronary thrombosis. Willius in a recent electrocardiographic study of 155 cases of angina pectoris, found 18 cases or 11.6% had the electrocardiographic alterations in the T wave described by Smith. In many other cases abnormal electrocardiographic curves were obtained and among these 22 cases had aberrant Q. R. S. complexes in all leads which conformed to the type obtained in animals or patients with bundle branch block. He, however, lays considerable stress on the significance of alterations in the T wave as an indication of myocardial damage.

A study of the electrocardiograms of 9 of our cases that were proven at autopsy to have coronary occlusion adds rather inconclusive evidence to the cases that have already been published. In four cases there was auricular flutter. One of these patients had thrombosis of the descending branch of the left coronary artery and was the man who was described as dying within 9 days of the onset of his acute pain, the other showed thrombosis of the descending branch of the left coronary artery. All showed extensive lesions in the myocardium supplied by these vessels. In two of these cases the flutter ceased and the rhythm became normal before death. In none of them were there significant alterations in the Q. R. S. complex and in none were there changes in the T wave that corresponded to those described by Smith and others.

Two cases, both with thrombosis of the descending branch of the left coronary artery showed electrocardiograms in which the Q. R. S. complex was distinctly abnormal. In its widening, in its small size, and in its notching in all leads, it presented the appearance which has been described by Oppenheim and Rothschild and others and which is considered indicative of a bundle branch block. In three cases, one of occlusion of the right coronary, one of occlusion of the circumflex branch of the left with partial occlusion of the right and one of the thrombosis of the circumflex branch of the left, the electrocardiograms showed no significant abnormalities except those alterations in the deflections of the R wave that are indicative of left ventricular preponderance. It is obvious, therefore, that many cases of coronary artery thrombosis and occlusion may occur without the production of ventricular tachycardia or the detection of those alterations in the T waves that are so frequently encountered after experimental ligation of these arteries in dogs. When these abnormal elec-

trocardiograms are obtained they are undoubtedly a sign of value, but they may be absent in the most characteristic cases.

In conclusion, therefore, I may say that sudden stoppage of the circulation in one or the other coronary artery which is otherwise normal probably leads to immediate or fairly sudden death possibly from fibrillation of the ventricles.

Thrombosis usually but not invariably occurs in arteries that are previously diseased and narrowed by sclerosis.

Occlusion either by thrombosis or sclerosis under these circumstances may be compatible with life for varying periods of time, though death when it comes is usually sudden. In a small group of cases the disease pursues its course as a rapidly progressive cardiac insufficiency without features of particular note. But in the great majority of cases, there are significant symptoms and signs that frequently allow of a fairly accurate diagnosis. Most important of these are pain often with a particular radiation, the appearance of transient pericardial friction rubs, often associated with the acute onset of myocardial insufficiency and various forms of tachycardia and cardiac arrhythmia, all occurring in an elderly person usually without signs of valvular heart disease. Unfortunately, there does not seem to be any one electrocardiographic sign that occurs in all cases.

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THE RELATION THAT EXISTS BETWEEN HYPERTENSION, MYOCARDITIS AND NEPHRITIS.*

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Analysis and synthesis are methods by which we seek to obtain knowledge of unknown substances, processes and conditions. In internal medicine we use analysis to subdivide and classify cases representing a general group and so try to obtain a more complete knowledge of the condition. As an example, we subdivide pulmonary tuberculosis into miliary tuberculosis, tuberculous pneumonia, tuberculosis with cavity formation, etc., and recognize that these different varieties have a different prognosis, should receive different therapeutic management, have different physical signs, etc In such a method of study we emphasize differences and use differences as a basis of classification or grouping. By contrast, in synthesis we dwell on similarities and by using similarities we bring together smaller groups into larger groups. To return to tuberculosis, we recognize that all forms have a common etiology, the tubercle bacillus, that the anatomical differences depend on the number of tubercle bacilli and how they make their entrance, on the tissue infected and the degree of resistance in the patient, that we are dealing with a single disease, tuberculosis, which in its relation to the general public is much the same whatever the type in the individual.

Both analysis and synthesis contribute to our advance in knowledge of disease. The method of analysis perhaps is more often used in medicine and as a result we discuss classifications of all sorts of diseases and conditions. By so doing we learn much, but on the whole we increase the complexity of medicine and sometimes we do this without advancing greatly our actual knowledge of the subject. On the other hand, synthesis, when it is possible, tends to simplify our conceptions. Both processes undoubtedly need to be used in studying disease, analysis with its subdividing up to a certain point, then synthesis, putting together our knowledge with broader concepts.

Today I am going to discuss that group of patients who, broadly, we term cardio-renal from the

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viewpoint of synthesis, dwelling on similarities rather than differences, attempting to see what common ground there may be in patients who present themselves as suffering in the main from hypertension or from myocarditis or from nephritis. In doing this one naturally considers what relations there may exist between hypertension, myocarditis and nephritis.

The motto of your society is an equilateral triangle with the name of one of the states on each side of this triangle. Without knowing its real origin I assume that this motto means the union of the medical strengths or interests of these states, each state being of equal importance in the organization, but each dependent on or bound to the other two so as to gain strength and solidarity by the union. To express a somewhat similar relationship I will use your triangle and instead of Iowa, Illinois and Wisconsin, I will substitute hypertension, myocarditis and nephritis. This arrangement indicates that these terms have an individual independence like states but also an interdependence through which this triad forms an important expression of the general relationships of significant morbid processes in the human economy. It is chiefly about this latter aspect, interdependence, that I will speak.

If you will pass over in your mind recent patients in whom you have made the diagnosis hypertension, or myocarditis, or nephritis and recall the findings in different ones of them, you will recognize that sometimes there were abnormalities which seemed to justify the diagnosis of but one of this triad, at other times two or even three of them. That is, there were some cases in which you could demonstrate but a high blood pressure without evidence of cardiac or renal damage, while there were other cases in which without a high blood pressure or abnormal renal lesion the heart was enlarged and improperly functioned. In yet another group there were normal blood pressure and a properly functioning heart muscle, but poor renal function. Much more commonly the findings indicative of one of these groups were combined with those of another or there was a combination of all three. Then, if you will think of the progression of events in any one of these cases, you will recall that in some at first there was hypertension, but later the heart enlarged, that somewhat later poor renal function appeared and, finally, a decompensated heart was combined with a picture of uremia. In other cases a combination of two but not of all three conditions appeared. The occurrence of these combinations suggests a close interdependence of these processes in their cause and their progression.

Let us first consider hypertension. The prevailing view at present is that hypertension is dependent upon changes in the small arteries, the arterioles, scattered throughout the body, and that, while it is often combined with the condition in the larger arteries, which we term arteriosclerosis, it is not caused by such arteriosclerosis. Without question we find hypertension in patients in whom there is no demonstrable arteriosclerosis and arteriosclerosis of marked degree occurs with normal blood pressure. Sir Clifford Allbutt early recognized this independence and considered arteriosclerosis a degenerative or descrescent process quite apart from hypertension, or, as he called it, hyperpiesis. It is well to bear in mind that in a clinical sense arteriosclerosis is usually used as a term to indicate that the larger arteries show thickening of their walls, tortuosity and calcification in combinations and that hypertension or hyperpiesis means a persisting high blood pressure. It is incorrect to infer that, because there is arteriosclerosis in this clinical sense, the blood pressure is high and equally incorrect to think that hypertension is not present because the palpating finger detects no changes in the arterial wall. As a matter of fact, very often arteriosclerosis in this clinical sense and hypertension coexist but the former does not cause the latter. Very often these mistakes are made in discussing patients with arterial disease.

Granting that the immediate cause of hypertension lies in the arterioles, i.e., is due to an increased peripheral resistance from narrowing of the peripheral vascular bed at the level of the arterioles, what changes, if any, will be found in the arteriole? Either spasm of the vessel wall or an organic change in the wall causing a narrowing of the lumen or interfering with the dilatation of the vessel will result in an increased blood pressure if these changes are very general in the body. If there is spasm alone the microscope will reveal no change in the body tissues. It there is an organic lesion, the microscope will show thickening and degeneration of the wall of the arterioles. It is believed that in earlier stages of the process often there is only a spasm while later there are organic

changes; what you find under the microscope depends on this.

What is the cause of these changes in the arterioles? By many it is stated that nephritis is the cause of hypertension and that consequently finding a high blood pressure justifies the diagnosis of nephritis even though there is no other evidence of renal disturbance. We now know that very often we find hypertension in patients in whom renal function, tested by any method, is practically normal and that in hypertensive cases autopsy in some instances shows only minimal lesions in the kidney. In other words, we have evidence that nephritis is not a constant cause of hypertension. Whether nephritis ever causes hypertension will be discussed later.

Another cause for hypertension, rather recently adduced, is that it results from a disturbed salt metabolism and can be satisfactorily treated by eliminating salt from the diet. Our studies at the Peter Bent Brigham Hospital have not supported this view. This is not to say that in some cases of hypertension we do not find poor salt elimination. This has been long recognized,, but it is our belief, based on our own observations, that salt retention is dependent on a disturbed renal function and an accompaniment of some cases of hypertension rather than an important causative factor.

Infection has been adduced as an important cause of hypertension in the sense that it has lead to the vascular lesions. Antecedent infection rather than coincident infection is what is described. Hence it is not likely that infection would cause spasm but rather organic lesion of the wall of the arterioles. Evidence for this is in the main statistical and is subject to considerable error; it is easy to find a history of infection of some sort in most adults; whether there are more infections or infections of a more severe or more chronic type in cases of hypertension is difficult to decide for any large group of cases. We do know that many infections cause vascular lesions demonstrable under the microscope and these very probably may lead to persisting vascular changes causing hypertension. Anyhow, there is a growing belief that infection plays a large part in causing hypertension. Curiously enough, however, syphilis which we know to produce some striking vascular lesions, such as aortitis and aneurysm and in whose lesions of all sorts periarteritis is prominent, seems to play but a small part in hypertension; the proportion of patients with hypertension who have positive Wassermann reactions is relatively very small and antisyphilitic treatment rarely benefits hypertension.

Some endocrine disturbances are associated with hypertension, but that such a cause is at all general seems very improbable. I might discuss other assigned causes in a similar way. What I want to emphasize, however, is that today we know of no one final cause of hypertension; a number of factors play a part and perhaps there are a variety of causes. Hypertension very likely is, in a sense, of the nature of a symptom and not a disease, an expression of a disturbance that, like fever, might have many causes. As to the mechanism, it seems pretty certain that it is caused by a disturbance in the small blood vessels, arterioles and smaller, of the body.

Now let us turn to nephritis and consider it somewhat as we have discussed hypertension. For nephritis we have better knowledge of the organic lesion than we have for hypertension for we find in practically every case some demonstrable lesion in the kidney. However, as in hypertension, the degree of functional disturbance often is quite out of proportion to the demonstrable organic lesion. Again, in nephritis the relative relation of vascular to epithelial lesion is not fully understood. There is a considerable body of evidence that in a large group of nephritides the vascular lesion is the primary and the most important disturbance, while the changes in the epithelial structures are secondary to the vascular lesions. This applies particularly to that large group of renal patients that we ordinarily speak of as having chronic interstitial nephritis. Moreover, there is a growing feeling that the eye changes, commonly spoken of as albuminuric retinitis, are in essential vascular lesions of local origin, bearing only an indirect relation to the renal lesion and having no relation to uremia. If this is true not only is this type of nephritis in large part a vascular lesion, but also it is one expression of a general process involving other vascular territories than those within the kidney.

I have already spoken of the possible relationship between hypertension and nephritis and stated that nephritis does not bear a constant causal relation to hypertension but that hypertension may be found without evidence of nephritis. Certain types of nephritis are not accompanied by

high blood pressure, while with other types we have hypertension. In some cases we have recorded observations of hypertension prior to evidences of nephritis and later see the picture of nephritis develop. In other cases we have no positive evidence of hypertension prior to the development of symptoms and signs of nephritis and in certain of our cases of acute nephritis we observe the blood pressure to rise as the nephritis progresses. So I am inclined to think that at times high blood pressure is caused by nephritis, but it is not possible to say how often this is true in chronic nephritis, and we do not know just how the hypertension is brought about. It is also true that the vascular lesions causing hypertension may in the kidney cause the clinical picture of nephritis, perhaps indirectly actually cause nephritis.

Disturbed salt metabolism is often present in nephritis, but that it is a direct cause does not seem very probable. On the other hand, almost all students of the renal problem believe that infection is a very important causative factor in nephritis. Here, as with hypertension, direct evidence is often lacking, but the frequent observation of an infection just prior to the development of an acute nephritis is very suggestive so far as acute nephritis is concerned. With nephritis, as with hypertension, syphilis appears to play only a very minor role.

It is recognized that certain of the endocrine disturbances effect renal function but there is little evidence that any such disturbances cause nephritis. You see, as with hypertension, nephritis perhaps has a variety of causes not all of which, by any means, have I attempted to discuss. What I wish to emphasize is that there is observational evidence that in some patients hypertension bears some, even though an indirect, causal relation to nephritis and that both in hypertension and in some types of nephritis a lesion of small blood vessels is an important part of the causative mechanism of the processes.

If now we treat myocarditis from the same viewpoint, we find much in common with the conditions which I have just discussed for hypertension and nephritis. Perhaps it is necessary at this juncture to define my use of the term myocarditis. I mean by myocarditis a disturbance in the heart muscle, which leads to cardiac insufficiency, a type of heart which is usually enlarged but in which the valves are structurally normal. There is no constant finding as to type of irregularity, though sooner or later in the majority auricular fibrillation develops; however, some cases never develop arrythmia. Under the microscope the heart muscle may appear suprisingly normal and changes in the interstitial tissue may be very slight or even absent.

For the cases of myocarditis I think we know less in regard to the lesion than we do for either hypertension or nephritis, certainly far less than for nephritis. That the disturbance in the heart muscle is primarily referable to the small arteries is an attractive hypothesis, fitting many of the associated phenomena but of which unfortunately we have little positive evidence. Coronary sclerosis is often present but is very far from a constant finding.

The association of chronic myocarditis with hypertension is interesting. Very often we have the opportunity to observe a patient with a high blood pressure whose heart so far as we can judge functions normally and we cannot demonstrate any real enlargement. A little later in the same patient we find the heart enlarged. Still later there is breathlessness and finally cardiac decompensation with all of the findings that lead us to make the diagnosis of chronic myocarditis. High blood pressure has persisted throughout. What is its relationship to the myocarditis? It is simple to say continued work against abnormal pressure has led to the cardiac disturbance, but is it so? Most observers are rather unwilling to say that a true work hypertrophy with subsequent decompensation of the heart can occur. It seems more probable that some common cause has lead to hypertension and to the cardiac lesion and that cardiac enlargement is but a phase in the progression of the lesion.

In contrast to such a patient we see patients with identical cardiac findings but with normal blood pressure. Some observers intimate that here hypertension has antedated cardiac decompensation and cardiac decompensation, at the time the patient is first observed, has caused a previously high pressure to fall to normal. It seems to me that the evidence for such a belief is insufficient and that such a sequence is more improbable than probable. To my way of thinking just the same cardiac lesion may develop either with or without hypertension. However, this is not to deny that there may not be a vascular lesion at the bottom of each type of myocardial lesion; to have hyper-

tension the vascular lesion must be quite general and not merely localized in one or several organs. We can say that, if it is general, we have hypertension; if it is localized in the heart, we have chronic myocarditis; if it is both general and localized in the heart we have hypertension and chronic myocarditis.

The role of infection in causing myocarditis stands as unproven. There is considerable evidence in its favor but relatively little direct proof. Still we do observe a typical chronic myocarditis develop as a sequence of such acute infection as pneumonia often enough to give support to the view that infection plays an important role. On an inferential basis, as for nephritis and hypertension, we are justified in the hypothesis that infection may be an important factor in causing changes in the heart muscle that result in that form of cardiac insufficiency which we term chronic myocarditis. As for hypertension and nephritis, syphilis seems to play a minor role; as in the other two conditions our findings at the Peter Bent Brigham Hospital of positive Wassermann reactions or other evidence of syphilis in these cases of chronic myocarditis are infrequent.

As to endocrine disturbances, we know that a continued hyperthyroidism often leads to a cardiac disturbance of the nature of chronic myocarditis; yet it seems improbable to me that it is the cause of any large proportion of cases of chronic myocarditis. Certainly in Boston we fail to find evidences of antecedent or coincident hyperthyroidism in these cases and similarly evidence of other endocrine disturbances are very infrequent.

I have attempted to show, that, so far as we know, very similar causative factors are operative in the production of hypertension, nephritis and myocarditis even though we can but rarely say for a given case that the cause has been a definite one. Furthermore, we have either direct evidence, good inferential reasons or well supported hypothesis, for believing that in all three conditions disturbance in the small arteries constitutes an important part of the lesion. All three conditions occur with far greater frequency at middle life or later, though all may be observed occasionally in the young.

The similarities which I have brought out justify us in grouping hypertension, nephritis and myocarditis together. We are justified in claiming that there is any constant sequence in these processes or that in any given case at any period of time all three will be present. In fact, we have to recognize that we see patients with nephritis without hypertension and without myocarditis and myocarditis cases without hypertension and with only such renal disturbance as is the result of chronic passive congestion. These findings however, do not preclude a common lesion with different manifestations dependent on what viscera are extensively involved. Also, they do not prove that in all three the same general processes, namely, vascular disturbances, are operative. I think we can state that if a hypertension develops and persists, sooner or later we will be able to demonstrate changes in the larger vessels, i.e., arteriosclerosis in a clinical sense, that the heart will hypertrophy and become insufficient, i.e., chronic myocarditis will ensue and that renal insufficiency will appear, i.e., chronic nephritis will develop. In some cases this actual sequence will take place; in other cases the sequence will be different but the end stage the same. Finally, the progression may be stopped by death at almost any stage and so the end result in any given case may be hypertension with arteriosclerosis and little else or with these there may be chronic myocarditis but no real nephritis or chronic nephritis without any actual cardiac insufficiency. In a pathological sense there may be lesions very marked in arteries, heart and kidneys or much more marked in one than in the others.

I believe that there is much evidence for a very close relationsip between what we clinically term hypertension, myocarditis and nephritis and that a better understanding of these processes is obtained by considering their resemblances rather than their differences, whether we are studying their causes, their manifestations or their management. In other words, synthesis is more helpful at the present stage of our knowledge than analysis in considering hypertension, nephritis and myocarditis.

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TUMORS OF THE BREAST FROM THE STANDPOINT OF THE GENERAL PRACTITIONER AND THE GENERAL SURGEON.*

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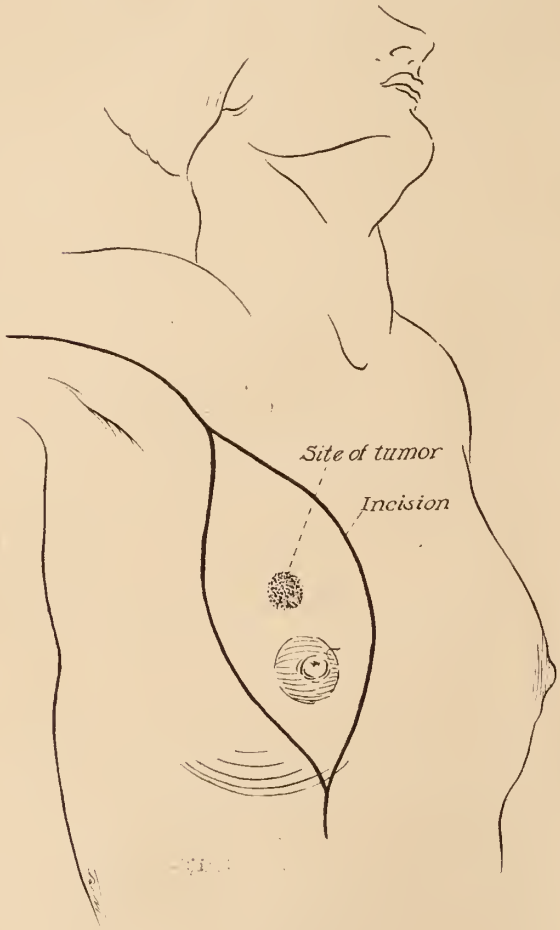
It is my purpose this evening to discuss the subject of tumors of the breast as a practical, every day problem in clinical work, a problem which is quite as important, if not more important, to the



general practitioner than it is to the general surgeon. I should like to do this in the simplest way and from the standpoint of my own personal experience with the subject. It will be necessary also in discussing tumors of the breast in this particular way to include also a discussion of the chronic inflammatory processes which stimulate tumors and of the other conditions, either real or imaginary, which lead the patient and sometimes the medical man to come to the conclusion that a tumor exists, when, as a matter of fact, it does not exist. These later cases I shall discuss under the general title of "pseudo-tumors."

I want to say a word or two in regard to the history of this subject. In the days of Billroth and in the days of Gross a good deal of study and attention was given to this general subject and some definite conclusions arrived at, conclusions which we have been forced to alter by the knowledge which has been accumulated in the last thirty years. Billroth presents in his monographic article on this subject in the Billroth Petha System of Surgery a very complete discussion of the subject up to the time that that article was written. Let me summarize some of the views which are presented. First, in regard to the frequency of the various neoplasms found in the breast, Billroth's work seems to show that carcinoma occurred in about 80 per cent of the cases, benign tumors in about 10 per cent, and sarcoma in approximately 10 per cent. During Billroth's time there was a great deal more confusion in regard to the proper surgical procedure to adopt than there is today. It is quite clear that many of the supposed malignant tumors operated on at that time were not malignant but benign, and it is also quite clear that the operation done fell short of being radical in the sense that we employ the term today. To be sure the breast was removed and very often the axillary glands, but the complete radical operation had not as yet been introduced. The percentage of recoveries in the cancer cases, because of the fact that many of these cases were operated upon late and the operation was not very radical, was small. On the other hand many benign cases were operated on with the diagnosis of malignancy.

Some surgeons of considerable experience at that time took the point of view that very few cases of cancer of the breast were permanently cured by radical operation. Since Billroth's time there have been these very considerable changes.

In the first place, because probably of several factors, we are today seeing a much larger percentage of benign tumors of the breast than were seen by Billroth and his colleagues. In my own work benign tumors today form the majority, probably somewhere from 50 to 60 percent, of the tumor cases that come to my service. In the second place, on account of the more general edu-

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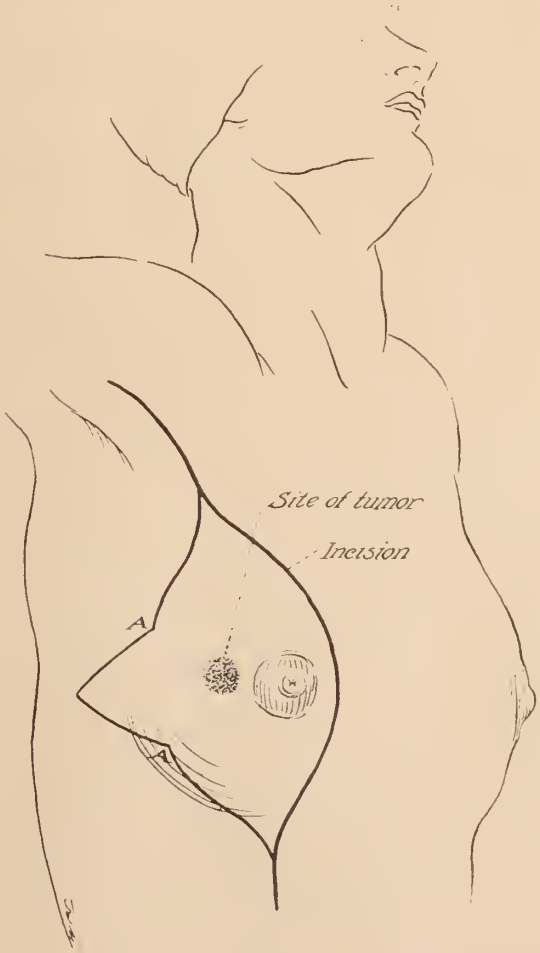
cation of the public of the danger of cancer and of tumors of the breast generally, on the whole women are coming to us for operation much earlier than they did 30 years ago. In the next place, following the work of Heidenhain, Stiles, Halsted, Willy Meyer and others, we are doing a much more radical operation and one that carries with it much more safety to the patient and as a result our percentage of cures has increased very considerably.

Treating this problem as I intend to do in the simplest and in a practical way, let us ask ourselves what shall we do with a woman who comes to us with a tumor of the breast. In the first place, we must ask the question, has she a tumor of the breast or not? That is by no means an idle question. I feel quite confident that I see at least fifty women a year who consult me for a supposed tumor of the breast where none exists, and these form a very interesting group of cases and one which must be studied very carefully by every honest, scientific surgeon.

These cases occur especially in two classes of women, the women who have been badly frightened by the occurrence of cancer in some member of their family or of some friend and who, because they have a twinge of pain in the breast, believe or at least are afraid that they themselves have a tumor and probably a cancer of the breast and come directly to a consulting surgeon for examination. The surgeon examines the case with great care and finds no neoplasm at all and most of these women are entirely and completely relieved by the assurance that they have no tumor and go on their way rejoicing.

The second group are cases which have been seen by some general practitioner who has listened to their story, then examined the breast and convinced himself, let us say perfectly honestly, that he could more or less vaguely outline a tumor in the breast in the position in which the woman complains that she has some pain or tenderness. These cases then come to the consulting surgeon of experience who examines them carefully and finds no tumor of any kind or anything that resembles a tumor, or he may find as not infrequently happens, that the woman has a lobulated breast in which the lobules of the breast are separated from each other pretty definitely by connective tissue septa so that one can pick up one of these lobules between the thumb and finger and without much stretch of the imagination imagine that we are palpating an encapsulated neoplasm.

I must add, too, a third group to these cases; that is a group in which a woman imagines that she has a tumor. She goes to the family physician and he imagines or believes that she has a tumor and she is then sent to a consulting surgeon, who should know better but either does not or is dishonest and is willing to operate on the case for the sake of a fee. It seems almost incredible that such a state of things could exist, but yet it is true beyond peradventure, because I have seen many cases which have been referred to consulting surgeons where the surgeons have recommended and urged immediate operation for tumors of the breast where on examination on my service we found that none existed at all. I have seen that



so frequently that without hesitation I make the statement that many breasts are operated on every year in this country where no tumor exists, some of these through mistake and others because the

case furnishes an opportunity of making a fee, and one must remember also, a brilliant opportunity of making a permanent cure for cancer by amputation of the breast where as a matter of fact no cancer or even tumor of the breast has ever existed.

Now let us come to the next practical question, that is, the class of cases in which tumor undoubtedly does exist. A woman comes to your service with a tumor of the breast. I want to say to begin with that tumors of the breast are definite, tangible things, like a bean or an olive or an English walnut or an egg or an apple. It is not necessary to strain one's imagination or eyesight at the end of the palpating finger to determine the presence of a neoplasm if one actually exists. In making the examination one can do very well by adopting two different methods, first, placing the flat of the hand on the breast and pressing the mammary gland with the flat of the hand toward the thorax and with gentle rotating movement see if a tumor can be palpated in this way. Usually it can be. Then in the next place, after determining the location of the tumor that particular segment of the breast is picked up between the thumb and finger and the tumor definitely located and outlined. After locating the presence of the tumor, the next step is to answer the question, is this tumor benign or malignant, or in the third place, instead of being a tumor at all may it be a chronic inflammatory process. In other words, in determining the character of a swelling of the breast,—and I am now excluding for the time being acute inflammatory proecssess such as acute abscesses,—one must answer three questions: is it a benign tumor, is it a malignant tumor, or is it a chronic inflammatory process in the breast.

The differentiation between a benign and a malignant tumor depends very largely upon the fact as to whether the tumor is movable in the mammary gland tissue or whether it is frozen into the mammary gland tissue. Benign tumors are almost invariably movable in the mammary gland tissue. That does not mean that one can move the tumor on the chest wall, because that can be done in malignant tumors unless it is absolutely frozen to the thorax. A benign tumor should be movable in the sense that when you hold the mammary gland fixed with the thumb and finger a benign tumor can be moved in the mammary gland tissue itself. This is not true of a malignant tumor, nor is it true of chronic inflammatory processes in the breast. The simple evidence obtained as to whether a tumor is movable or frozen-in over shadows in value all other evidence that can be obtained in mammary gland neoplasms. Of course, there are other simple practical points to consider,—the presence of a tumor in both breasts in a young woman of 21 speaks with almost absolute certainty, because of the age and because both breasts are involved, against carcinoma and in favor of the neoplasms being benign. It goes

without saying that in the breast as in carcinoma elsewhere these malignant neoplasms occur with much greater frequency during the cancerous years of the individual's life, from 40 to 60 years of age.

The usual classical descriptions given in our textbooks of a malignant tumor in the breast are for the most part of little value in making an early diagnosis. Pain, the marked retraction of the nipple, the marked fixation of the tumor to the skin, the fixation of the tumor to the underlying muscles of the chest wall, the presence of lymphatic nodes in the axilla, and the evidence of car-

cinomatous cachexia, most of these pieces of evidence are of little or no interest to the clinical surgeon who is anxious to operate on a patient at a time when there is a good prospect of permanent cure. They are of rather more interest to the pathologist. There is one piece of evidence, however, that occurs fairly early and in comparatively small malignant tumors which should be emphasized and is of real practical value, that is, the dimpling of the skin over the malignant neoplasm and one must, of course, not disregard, even in early cases, this same condition which produces a retraction of the nipple.

A malignant tumor of the breast where there is a good prospect of a permanent cure by operation is the tumor that is seen so early that few if any of the evidences of the old classical picture are present and when, in fact, the diagnosis rests alone upon the discovery of a neoplasm that is frozen in the mammary gland; without any other pieces of evidence this alone furnishes the evidence upon which the operator acts, and this malignant tumor of the breast must be also, if we are to class it as a favorable case, one in which the cancer is limited to the primary focus and in which there is not as yet any palpable involvement of the nearest lymphatic node,—the nodes found in the axilla.

Now before we discuss the question of the proper surgical handling of these cases and the prognosis, let us take up the subject of benign tumors of the breast. In order to reduce this subject to the simplest possible terms, instead of making any elaborate classification of these various benign tumors, let me say that in a practical way we may group these benign tumors all under the title of adenoma; this includes fibroadenomas, simple cysts and the tumor which may be possibly best described as cystic disease of the breast, which has been so well described by Schimmelbusch that it has been frequently referred to as Schimmelbusch's tumor of the breast, a condition which is thought by some authors to be a cystic disease due to chronic mastitis, but which Schimmelbusch believes, however, to be neoplastic. I quite agree with that theory that this cystic disease of the breast is neoplastic and not inflammatory. There are to be sure a great variety of benign tumors which may occasionally occur such as lipoma, angioma, enchrondroma, etc., but almost all of the benign tumors of the breast that we meet with in our clinical work can be referred to one of three groups either fibro-adenoma, simple cyst of the breast or multiple cysts occurring as they do in Schimmelbusch's disease. Fibro-adenoma might again be subdivided into a number of varieties, such as intracanalicular fibromas, intracanalicular adenopapilloma, etc., but I think for practical clinical purposes this is unnecessary. These fibroadenomas are encapsulated and very distinctly movable in the breast tissue when one fixes the mammary gland firmly against the chest wall. They vary in size, they very frequently involve both breasts, and they very frequently begin in early womanhood, in the twenties. Simple cysts are also, although not encapsulated, freely movable in the mammary gland tissue because they are not frozen in as a malignant neoplasm and are not surrounded by inflammatory tissue as in chronic inflammatory processes. A cyst can be also movable and involve both breasts and may occur comparatively early in life. Where there is a single large cyst careful dissection not infrequently discloses the fact that there may be small cysts in close contact with the large cyst. As an example, one will not infrequently remove a cyst the size of the yolk of an egg and in close contact with it there may be two or three or a half dozen cysts no larger than grains of sago, but for all practical purposes the cyst is a single cyst.

The Schimmelbusch tumor is a disease of early womanhood. It may involve both breasts and it may be limited to a small area of the mammary gland or it may develop gradually and involve most of the mammary gland tissue. As you all know, in cross section the disease is made up of multiple cysts varying in size from grains of sago to cysts the size of a bean or even smaller cherry, forming a picture in pathologic anatomy somewhat like cystic disease of the kidney one sees in congenital cystic kidney. In this neoplasm there is frequently no difinite capsule. On the other hand, one of these tumors the size of an egg is usually fairly movable in the mammary gland tissue because again it is not frozen into the mammary gland tissue by extensions of the process, such as occur in carcinoma or by inflammatory processes, such as occurs in chronic inflammatory lesions of the breast.

I want to say a word now in regard to sarcoma of the breast. Sarcoma of the breast is certainly a rare lesion and I have seen comparatively few

cases: Of course, in looking over widely the literature one may find a considerable number of sarcoma of the breast, cases representing all varieties of sarcoma, but in my own clinical work I doubt very much whether sarcoma has occurred in more than 2 or 3 per cent of our cases. In the early development of sarcoma of the breast it gives us a somewhat confusing picture, midway between a benign and malignant neoplasm, in the sense that some of these sarcomas have a distinct capsule and are freely movable in the mammary gland tissue, but as they grow larger and the process involves the tissue outside of the capsule we have the same frozen in characteristics that we find in carcinoma.

Let us now consider for a moment the chronic inflammatory processes that may simulate tumor, because, as I said in the beginning of this discussion, it becomes necessary to make a differential diagnosis in our ordinary clinical work between these chronic inflammatory processes and neoplasms. The chronic inflammatory processes which I have met with have been three in number: tuberculosis, syhilis (gumma), and actinomycosis. We can dimiss actinomycosis with a few words as the lesion is comparatively rare and is one that is not very often apt to be confused with a neoplasm, though, this is possible at times. Actinomycosis of the breast is, of course, secondary to lung and actinomycotic processes extending through the and pleura to the mammary gland, producing hard swellings with not infrequently fistulous tracts. The swelling is quite characteristic. This woodlike induration one finds in almost all actinomycotic processes. It is associated, as I have said, very frequently with fistulous tracts and, of course, examination of the pus and granulation tissue scraped out with the curet will usually disclose the rods of the actinomyces or complete characteristic colonies.

Syphilis of the mammary gland is by no means uncommon and one should be on his guard against the possibility of this simulating malignant disease. I have several times seen syphilis of the breast operated upon with a diagnosis of cancer and have seen one breast sacrificed for gumma with a diagnosis of cancer and then after the same process developed in the other breast, by more careful examination the correct diagnosis determined and the process cured by proper antispecific treatment.

Tuberculosis of the breast may, of course, simulate malignant disease or benign neoplasm. The diagnosis, however, on gross section with direct inspection of the pathologic process is not very difficult, and inasmuch as these cases of tuberculosis seldom if ever give anything like the typical picture of carcinoma but present characteristics placing them in the list of cases demanding visual inspection of the pathologic process before a radical operation is made, the correct diagnosis and correct surgical therapy present in correct practice no insurmountable difficulties.

As these patients with swellings in the breasts come to us I believe one could say that in more than 90 per cent of the cases we can make an accurate clinical diagnosis from examination of the swelling and determine in this large percentage of cases, more than 90 per cent, whether we have to deal with a malignant growth, a benign growth or a chronic inflammatory process. In this 90 per cent of the cases I feel that the clinical diagnosis is so definite that we can proceed with our operative interference without direct inspection of the neoplastic tissue and in the cases in which we believe we have a definite carcinoma to deal with, proceed at once to radical operation; in the cases in which we believe we have a benign neoplasm to deal with proceed to a local removal of the neoplasm first, by making an incision in the fold under the breast, turning the breast upside down, removing the neoplasm, obliterating the dead space in the mammary gland at the site from which the neoplasm has been removed, dropping the mammary gland back into position and closing the external wound. This course is much to be preferred, because the scar will not be visible, to an incision directly over the neoplasm which will leave a more or less disfiguring scar. Of course, when we handle a benign neoplasm in this way it gives us a definite opportunity of examining it grossly and determining the pathology in cross section.

This leaves a group of about 10 per cent of cases in which we begin our operative procedure with a feeling that we do not know whether the tumor is benign or malignant and that we must first determine this fact before we decide what procedure, radical or local, should be adopted in the particular case. Now how are we to determine in this doubtful group of cases whether a neoplasm is benign or malignant. In answer to

that I will say that almost invariably by exposing the tumor and by direct section of the tumor and making the diagnosis from the gross naked eye pathology. To the surgeon who is trained in gross pathology nothing is more satisfactory and nothing is more definite in the vast majority of these cases than a diagnosis from the gross pathology on cross section. Nineteen times out of twenty or more the section of a carcinoma is so definite that a trained surgeon has no question as to the condition which he has to deal with when he has cut through the tissue with his knife and exposed it for inspection. The same is true of benign tumors. This inspection of the gross pathology is a much more certain way of making a diagnosis in these doubtful tumors than a rapidly made frozen section. I have applied this method in my cases for a long time. I am very glad to find that Bloodgood in a recent article on breast tumors in Binney's Surgery presents quite clearly the same conclusions that the gross pathology can be relied upon much more safely than a rapidly made frozen section.

This leaves a very, very small percentage of tumor cases in which the diagnosis, after inpection of the gross section, is not absolute or in which one may be mistaken in his diagnosis. I doubt very much if this group would furnish more than one per cent of all tumor cases and these are the cases in which a very careful examination of the specimen after its removal and a very careful study of serial sections are necessary to make a definite diagnosis, and inasmuch as this is always made, or should be always made, in these tumor cases, it leaves the situation in regard to this small percentage of very doubtful cases in this way,—that the surgeon makes a diagnosis of a benign tumor or a doubtful tumor, removes simply the tumor and then submits it to a very extended and careful study with serial sections. That is complete within two or three days and on the basis of that careful study if it proves to be malignant, radical operation is then at once made.

In connection with this particular group of cases I want to say that I have no sympathy at all with the proposition that was preached a few years ago, that removal of the tumor from the breast for microscopic examination was bad surgery. If a tumor of the breast is removed and very carefully examined and we devote two or three days to this examination and study, I cannot see that any possible harm is done to the patient if at the end of the third or fourth day a radical operation is made. Cancer cells do not hop around like the Irishman's flea. They extend from the primary focus along the lymphatics by a slow process of growth just as a pumpkin vine grows along the ground and not by a kind of a growth that would develop in the two or three days during which the specimen is being examined.

Now so much for the practical differential diagnosis between these three groups of cases, the malignant tumor, benign tumor and chronic inflammatory process. Now what are we to do with the woman who comes to us with these swellings of the breast? I would answer without hesitation, we are to determine absolutely by some certain means of diagnosis the condition that is present. It is not fair to allow a case to go away without that advice. Even though a tumor looks benign we should know that definitely and that usually means in the presence of a single tumor the removal of the tumor for gross and microscopic examination. There are certain conditions in which a benign tumor might be left without any operative interference. Let me cite a few of these. A girl of 20 comes to you with two tumors in one breast and one in the other. They are perfectly movable and they are the size of cherries. They are with almost absolute certainty benign neoplasms, either cysts or fibro-adenomas. They are so small they are not disfiguring. Tumors of that kind can be safely left with the diagnosis that they are benign, but if they increase in size they should be removed.

Now in connection with these benign tumors I want to say a word in regard to the prospect of these benign tumors becoming malignant. I want to tell the story from my own clinical experience. Out of three or four hundred or more benign tumors that we have removed and have been able to follow in longer or shorter periods, I have never been able in but one instance, and that occurred here in Milwaukee, to follow out a case where we had diagnosed the tumor as benign and where later the patient came back with a malignant tumor, and from the theory of probabilities, inasmuch as 10 per cent of women of cancer age died of cancer, it would be not at all surprising if quite a number of women who had benign tumors of the breast removed later developed carcinoma of the breast.

Certainly there would be nothing unusual in one carcinoma of the breast in two or three hundred women who had benign tumors removed from the breast. I cite this because I am impressed with the fact that there is little or no reason for us to believe that benign tumors of the breast remain benign for years and then become malignant. I feel that that is not true. We must, of course, recognize the fact that any neoplasm may change from a benign condition into a malignant one, but I believe it is a very unusual thing and that it seldom happens and that there is little more danger of a benign tumor of the breast becoming malignant than there is of any other portion of that same breast becoming the site of a carcinoma. The confusing pictures which are so often cited of a tumor that looks benign and later becomes malignant are to my mind usually cases of tumors which have been malignant from the start, that is slowly growing malignant tumors. I feel therefore, we are not warranted in telling a woman that she should have a tumor of the breast removed for fear it might become malignant, because I do not feel that that is true.

The real problem, of course, of breast tumors is that of cancer of the breast. Let us analyze this problem and ask ourselves what are the real facts in regard to the prospects of cure in cancer of the breast. Cancer, of course, is beyond question originally a local disease and if we can make a radical operation of the breast when the carcinoma is the size of a bean or the size of a cherry, and the process is absolutely limited to the breast tissue and has not as yet invaded the draining lymphatics, there can be no doubt that the prospects of a permanent cure are excellent. There can be no doubt, for instance, that much more than 50 per cent of the cases of carcinoma of the breast that are operated upon early before the axillary glands are involved are permanently cured by radical operation. Unfortunately, however, as the cases come to us the prognosis is not nearly as good. I should say that out of 1000 cases of cancer of the breast that come to well trained, competent surgeons, probably 25 or 30 per cent of them are permanently cured by operation. The moral, of course, is that we should continue the propaganda, which we have already begun, through the profession, through the medical societies and through the special organizations, such as the Society for the Control of Cancer, to educate the public and the profession in the importance of having breast tumors inspected and properly handled very early.

The best surgical technique for the radical operation of the breast has become pretty well standarized, that is, the necessity of removing the mammary gland and overlying skin widely and underlying pectoralis major muscle and cleaning out the axillary fat and lymphatics. The dissection should be so planned that the block of tissue removed has at its center approximately the center of the primary focus; in other words, the dissection should be so planned that the periphery should be as nearly as possible equi-distant from the primary focus all around. My own experience has taught me that whenever the lymphatic glands in the axilla are grossly involved there is a poor prospect of permanent cure. I want to tell you why this is so. I want to sketch to you rapidly the lymhatic drainage of the breast. The lymphatics of the breast drain into the axillary glands and into the lymphatic glands in the anterior mediastinum along the internal mammary artery, into the posterior lymphatic glands in the posterior mediastinum along the intercostal arteries, into the lymphatic glands above the clavicle and also in a limited way into the lymphatics around the round ligament of the liver and the umbilious. Although the large lymphatics of the axillary space can be easily palpated and are probably also the first involved and are involved to the greatest extent, at the same time it is true that the lymphatics in the anterior mediastinum are involved almost as early. Involvement of the posterior mediastinal lymphatics follows shortly and then of course, the lymphatics above the clavicle and the lymphatics about the umbilicus. We cannot remove the lymphatics in the mediastinal spaces and inasmuch as when the lymphatics in the axillary space are definitely and grossly involved, we as a rule at the same time have an involvement of the mediastinal glands, we have to deal in this group of cases with conditions which prevent permanent cure.

Little need be said in regard to the technique as far as anesthesia is concerned. Drop ether anesthesia is beyond question the anesthesia of choice. Amputation of the breast could be done with gas and oxygen, but unless there is some special indication, not nearly as safely as with drop ether. There is little or no reason for ever employing lo-

cal anesthesia in extensive dissections and amputation of the breast. The operation, of course, can be done under local but it seems to me that it is stretching a good thing to the breaking point to adopt local anesthesia in radical breast work.

There is, of course, little or no mortality from the operation itself. The prognosis varies as far as the permanent cure is concerned from 50, 60, 70 per cent in the very early cases in which the lesion is limited to the breast and there is no axillary involvement, to a vanishing percentage of recoveries in the cases in which the operation discloses a very widespread lymphatic involvement extending above the clavicle. As a whole, if we are quite truthful and include all our cases, I think somewhere from 25 to 30 per cent of permanent cures in cases actually operated upon are the results that are being obtained.

Can these results be benefitted and improved by the X-ray? I think they can. Should radium be employed? I think not. I think the X-ray is of the very much more value in the after-treatment of breast amputations for carcinoma than radium. I feel personally very strongly that it should be employed in every case, that it should be employed by an expert, that it should be employed thoroughly but short of any prospect of burning the patient. The logic is irrefutable. Time and again I have seen gross recurrent carcinomatous lesions, the size of a bean or the size of a cherry, disappear under X-ray treatment. It seems perfectly clear to me that if these gross, visible, tangible lesions can be made to disappear under the X-ray that the microscopic group of cells from which they sprung could be very much easier destroyed if the X-ray is used immediately after radical operation. This I think should be advised in every case. There comes a time, of course, in hopeless cases where the X-ray evidently is of no value, where it holds out no prospect or benefit and where some other agent than the X-ray, such as morphine, had better be used for the purpose of making the patient as comfortable physically and mentally as possible without adding any possible injury from X-ray management.

In brief and in a simple way this seems to me to be the story of tumors of the breast as far as it can be told from the knowledge we possess today. These cases furnish us a real problem and a large problem and an every day, practical problem that must be met by the general practitioner and by the general surgeon and it can be met in the right way only if as a profession we educate the public and we help to educate ouselves and our colleagues so that there will be a widespread knowledge among the laity of the importance of tumors of the breast and the general knowledge that a small beginning carcinoma of the breast can be cured by proper surgical operation, that neglect of these cases means almost certain death, and it can be met properly only if the profession give to these patients the benefit of early diagnosis and early and proper surgical treatment. And may I emphasize the importance of not only giving patients with cancer of the breast the benefit of proper radical operative treatments but also treating those patients with benign tumors not by radical but by conservative methods.

OVARY AND ENDOCRINOLOGIST.

The development of the female (Müller's) duct system from an indifferent anlage is dependent on the presence of the ovary. The transformation of the infantile genital tract, inclusive of the secondary sex characters, to the adult stage results from a quantitative increase in ovarian secretion. The normal sexual cycle includes maturation of an ovarian follicle, ovulation, impregnation and pregnancy. Menstruation signifies the abortion of an unimpregnated ovum. The accompanying uterine changes are in many ways analogous to those occuring in abortion. Decrease or increase in ovarian secretion can produce clinical manifestations. Similar manifestations may result from other (non-ovarian) causes. Robert T. Frank, Denver (*Journal A. M. A.*, Jan. 21, 1922), claims that the ovarian extracts now in use have been deprived of the small amount of active substance that they may have contained when fresh. Their pharmacologic effect on the sexual tract is nil. This does not imply that a potent extract cannot be elaborated.

ROLE OF TRAUMA IN LESIONS OF SYPHILIS.

I. Harrison Tumpeer, Chicago (*Journal A. M. A.*, Jan. 21, 1922), is convinced that trauma may excite lesions in persons with acquired syphilis whose infection is dormant. Bone changes, gummas of the soft tissues and paretic brain changes are the usual manifestations. Trauma may act as the exciting cause in the production of lesions in individuals with hereditary syphilis whose infection is dormant and even unsuspected. A girl with hereditary syphilis, possibly of the third generation, developed epileptiform seizures and mental disturbances following a head injury causing coma. Her half-brother, likewise infected, developed primary optic atrophy following similar trauma. The healing of the fracture produced by the same injury was markedly retarded.

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EDITORIALS

PAY YOUR DUES!!

YOUR 1922 dues were payable during the month of January. If you have failed to remit these to your county secretary, the constitution and by-laws provides that you stand automatically suspended from membership until reinstated by payment of same.

This means that your medical defense is not active for any mal-practice suit which may be instituted against you during your period of delinquency.

Pay your dues today!

THE SHEPARD-TOWNER BILL IN WISCONSIN.

ON the eighteenth of January there was an important committee meeting in Madison. The committee was composed of representatives from all organizations in the State engaged in public health work. There were twenty organizations represented. Among those present was a representative from the State Medical Society.

The committee was called together at the request of the State Board of Health to discuss with representatives from that Board plans for carrying out the provisions of the Shepard-Towner bill. The Shepard-Towner bill is designated: A Bill for the Protection of Maternity and Infancy. It is a plan for state and federal government cooperation to provide funds for carrying out a campaign against some of the preventable causes of death due to pregnancy, and to bring expert advice to mothers concerning the care of children particularly during infancy.

Under this bill Wisconsin will receive approximately $30,000 a year for the next five years from the federal government, provided the State will provide an equal sum. If the State accepts this offer from the federal government, and it undoubtedly will, there will be made available approximately $60,000 a year for the next five years to be spent on maternity and infancy welfare.

It is evident that $60,000 will not bring expert medical care and advice to all infants and maternity cases in the State. There are, however, some agencies in the State which are already engaged in problems of infancy and maternity care. There are others which, while not directly interested in these problems, can be used to extend the work and make the government money go farther. The committee was called together in order to obtain information on what the various organizations are doing, and what they can be counted on to do. With this information at hand the government's funds will be spent only for those things which are not already being done and which are the most urgently needed.

The plan submitted by the State Board of Health provides for holding maternity conferences in maternity and child welfare centers. It proposes to establish at least one of these centers in each county, and to make available in these centers physical examinations and medical advice for maternity cases. In these centers children are also to be given physical examinations, and mothers advised concerning the care and feeding of children.

The discussion of the plans of the State Board of Health revealed that there are some organizations which are now engaged in work which is directly related to the work contemplated and which therefore will be able to supplement what the State proposes to do. There was demonstrated a cordial spirit of cooperation.

The largest public health organization in the State is the State Medical Society. This organization with its relation to the various county societies can contribute more than any other to the accomplishment of the purpose of this bill. The services of the medical profession will be needed. The State will have on the staff of the department through which this law is to be administered an obstetrician and a pediatrician. They can accomplish only a small part of the work. The organization of the State and County Medical Societies should be made available to secure the services of the profession for this work. The profession in general should give its hearty cooperation. —W. D. Stovall.

The above editorial was written on request by Dr. Stovall, Chairman of the Advisory Council to the State Board of Health. A report of the Delegate of the State Medical Society will be found elsewhere in this number of the *Journal*. The *Journal* has, with other medical publications and associations, opposed the passage of the Shepherd-Towner bill and the editor made every effort to help defeat it in its present form. It is here, however, and we must make the best of it. If the medical profession in each county will assert the leadership in its administration which is rightly theirs, the bad in it can be eliminated and much good can be accomplished. The State administration of the bill is probably in safe hands. A reading of the testimony given at the hearing in Washington, however, will convince any physician of the shortcomings of the scheme from the Federal administration standpoint, and we should not rest until its administration is taken from the Children's Bureau—a purely lay organization—and given over to some such established medical agency as the U. S. Public Health Service.

THE REFERENDUM ON THE USE OF ALCOHOL.

THE Journal of the American Medical Association has conducted a referendum on the use of alcohol, the results of which are published in the issue of January 21, 1922. This is of interest as it is the first expression of the physicians' attitude. The results however will hardly help to clear the question which has been raised by so much conflicting opinion. The Journal of the A. M. A. makes the following summarization:

1. Physicians of the United States are almost equally divided on the question as to whether whiskey is a necessary therapeutic agent in the practice of medicine, about 26 per cent consider beer necessary; about 22 per cent consider wine necessary.

2. More physicians of cities over 50,000 in population consider alcoholic beverages necessary than do those in smaller cities and in rural communities.

3. Physicians of the North Atlantic and South Atlantic states are more favorable to the therapeutic use of whiskey than are those in the remainder of the country.

4. The large majority of physicians who consider whiskey necessary believe it valuable in pneumonia, influenza and other acute infectious diseases.

5. A considerable proportion of those who consider whiskey of value utilize it in the treatment of diseases incident to old age and general debility, in convalescence, diabetes, heart failure and shock.

6. Beer is used therapeutically chiefly in lactation, convalescense, old age, and for the treatment of debility, dyspepsia and anemia.

7. Wine is used chiefly for the same conditions as is beer, but also as a substitute for whiskey.

8. About one-fourth of the physicians stated that they had seen instances of unnecessary suffering or death which they attributed to the en-

forcement of prohibition laws, including cases due to whiskey of illicit manufacture or of poor quality.

9. Many physicians are against restriction in either the drugs prescribed, in the number of prescriptions or in the amount of drugs prescribed.

10. Only 2 per cent of the physicians replying believed that physicians should be permitted to write more than 100 prescriptions in three months.

11. Many physicians say that limitation of the number of prescriptions does not provide for epidemics and encourages the use of the limit by many.

12. Many physicians say that limitation to a definite minimum quantity of alcoholic beverages over certain periods is a serious interference with treatment of conditions in which greater quantities are required.

13. A large majority of physicians believe that some regulation or restriction should be placed on the prescribing of alcoholic liquors.

14. A large number of physicians favor such regulations as are under the Harrison Narcotic Law.

15. The experience of physicians indicates that certain state laws are too stringent relative to the provision of pure alcohol for laboratory and surgical purposes.

16. Many physicians have not informed themselves as to their privileges under the present regulations relative to the securing of pure alcohol or of whiskey for office use.

17. The lack of uniformity in state and federal laws complicates the formulation of methods for adequately solving the problem of the medicinal supply of alcoholic liquors.

18. Physicians through their practice have observed extensive violations of the present prohibition regulations in their communities.

19. The majority of physicians would welcome a change in prohibition regulations which would take from them the burden of distribution of alcoholic liquors.

20. Many physicians believe that the provision of whiskey and alcohol for medicinal purposes by the government in sealed packages at a fixed price with control of prescriptions similar to that of the Harrison Narcotic Law will solve the problem of relation of physicians to the enforcement of prohibition.

LESLIE'S ON CHIROPRACTIC.

THERE is no information which the public needs more than that which will reveal the actual character of the claims made by certain medical cults—chiropractic in particular. This information is now forthcoming through a series of articles addressed to the public. Six articles entitled "Is It Chiro-*Quack*-Tic?" by Severance Johnson are now running in *Leslie's Weekly,* two instalments having appeared in the issues for January 7 and January 14. The medical profession has from the beginning recognized the ridiculously unscientific character of the claims made by these cultists and has repeatedly shown that chiropractors are working directly against public welfare; that they attempt—and with some success—to break down medical practice laws, and frequently and openly violate these laws, aided and abetted in doing so by the so-called colleges that are grinding them out. But the public also has large financial interests at stake. Public funds are now being appropriated to help educate competent medical men. To conduct a medical school today costs several times what the institution receives from students' fees, and this deficit is being offset either by state appropriations or private endowments. The expense is being further added to by a gradually increasing provision for scholarships for deserving students who are unable to pay tuition fees. Are the benefits of these expenditures to be lost or dissipated through the spread of chiropractic? Because of the great expense involved in training competent physicians, medical schools conducted for profit have practically disappeared. But the place of the old, low-grade, commercially conducted medical school is now being taken by chiropractic schools. Within a score of years, by charging maximum fees for a minimum of education, a long-haired but shrewd advertiser has amassed millions through conducting a chiropractic "college." A comparison of the brevity of the "professional" course and the common school education, required for admission, with the ten or eleven years of high school, collegiate and professional instruction required to develop a competent practitioner of scientific medicine

should at once show the inadequacy of the training obtained by chiropractors. The manner in which chiropractors disclaim the need of diagnosis and flout the fundamental sciences of chemistry and bacteriology should reveal to any intelligent layman the utter unreliability of chiropractic as a system of healing. It is high time that the public became fully informed in regard to the workings of this organized system of quackery, and *Leslie's Weekly* is rendering the public a great service by publishing the information.—*Jour. A. M. A.*, Jan. 14, 1922.

AS OTHERS SEE US.

(Editorials from the Lay Press)

THE EVIL OF FEE SPLITTING IN SURGERY.

The evil of fee splitting in surgery was recalled to attention this week at a meeting at St. Paul of the northwestern members of the American College of Surgeons, an organization which represents about 5,000 surgeons, including most of the more prominent members of that profession. The speaker who discussed this subject was Dr. R. I. Raymond, assistant director of the American College of Surgeons, whose position and reputation lend unusual weight to his words. Among other things Dr. Raymond said: "It is difficult to estimate the number of unnecessary operations that are performed for the sake of the fee, but it is certain that it is large. I should say that 10 per cent is a modest estimate of the number that are unnecessary. Sometimes the wrong lies wholly with the surgeon. *More often* he is partner of a physician who has sent him a patient on a fee splitting basis. A patient will be told that an operation is necessary and that he should see a certain surgeon. The surgeon may believe or know that an operation is useless, but will operate in order that neither he nor the physician who has sent him the patient may not lose a large fee."

According to Dr. Raymond, the remedy for this evil largely rests on the public itself. He continues: "Fee splitting grew out of an innocent practise twenty-five or thirty years ago. The public owes to itself the elimination of the practise. A little inquiry will disclose who are the fee splitters, and the public should not patronize them. The trouble is that in the past it has not been regarded as unethical. Still today, one may find competent surgeons who split fees. But the practise is becoming less. The American College of Surgeons, with a membership of some 5,000 in both the South and North American continents, will not tolerate the fee splitter."

The report of Dr. Raymond and his accompanying advice to the public deserve widespread publicity. Unquestionably, it is true that fee splitting is quite common in surgery, despite the efforts of the more reputable members of the profession to check this evil practise, and that public cooperation and discrimination are needed to make this effort more successful. Not only does this practise put a large burden of unnecessary expense on the public, but it results in the needless sacrifice of lives, for unavoidably some of the patients subjected to unnecessary operations fail to survive. It is all wrong, in fact, and is an evil that needs correction for the sake of the public good and welfare. And if the public would take pains to follow the advice of Dr. Raymond the remedy would be found, and reputable surgeons and physicians would share in the benefits.—*The Oshkosh Northwestern.*

DOCTORS AND THEIR FEES.

"Can't you show the doctors that the war is over," was the message which came into the office the other day. "They haven't reduced their fees a nickle and a lot of people are unable to pay them."

We do not presume to be able to put a price on professional service. We should hate to say just how much we might be willing to pay a physician for saving our own life or the life of one dear to us. We do not know what such services are worth and the amount would probably have to be determined in each individual case. However, we did go out and hunt up a reputable physician, one in whose judgment we had every reason to have full confidence and accosting him we said, "Doc, don't you know the war is over, don't you think it's about time for you to cut your fees. You are still charging three dollars a throw the same as you charged in war times and a lot of people think that it doesn't cost a doctor any more to live than

it does the rest of us and that he should come down on his charges along with other rates."

He didn't get sore and he didn't know that he was talking for public action. "Now just wait a minute and let me say something too," he started in. "If the doctor could be paid for all the work he does like a lot of other fellows I would say with you that the time has come for the doctor to reduce his fees but a doctor is never paid for all the work he does and nowhere near it. I want to say further that the doctor never was paid what his professional services were worth. You can't get a lawyer to draw a deed to a piece of property for you for less than a five-dollar bill and when it comes to getting divorced he charges five times as much as any doctor would do to make an honest effort to save the life of the wife in question. He doesn't get as much for saving the life of the baby as the minister does for baptizing it. He is not expected to take care of the work at his leisure but he is expected to have a high-powered automobile standing at the front stoop night and day to go out and take care of some one. He wants to do it and he wants to feel that at least some of the people are willing to pay the price he asks for the service. The doctor like the government serves every one but he appreciates that only the ones who have the money pay. I dare say today that the books of physicians in Kenosha will show more unpaid accounts than the books of any other business or profession. No reputable physician, to my knowledge, has ever refused to do his best to save the life of a man or a baby whether he knew he was going to get his pay or not. The doctor has an honored profession which must be sustained at all times. He must go night and day, pay or no pay and do all he can in the very best way he can. Sometimes he wins and of course sometimes he loses. When he loses he takes the blame and says nothing. When he wins he takes the praise and tries to charge a fair bill. Now if the assurance could be given to the doctors that they could collect all that they charge for professional services a lot of them would immediately say, "The war is over, and it's time for us to reduce our fees. Now take the case of this poor family"—and the doctor pointed to a page covered with notations of visits—"the children had scarlet fever, then two of them had the measles, this little boy came near dying with infantile paralysis and not once did the doctor let up in his care for the family. You notice that four visits were made to the house on that day. Under the prevailing rates this family would have been charged a bill which would have been a mill stone about its neck and would never have been paid, but it wasn't. The doctor knew the conditions and the bill that went to that family was at a rate of less than a dollar a visit. It hasn't been paid yet but the people are honest and they are going to pay some time but the fact that they are going to pay does not buy shoes for my baby or gasoline to run the car. Now this other fellow can well afford to pay three dollars for a visit at his house. He has been charged the three dollars and you will notice that there is no notation to show that the bill has been receipted. As a doctor, I try to make a fair deal for every one I treat. I know that I can't charge all of them the regular rate but we as doctors feel that all must be given the best we have in us. I am inclined to believe that you will agree with me that the rate is not too high when you have taken into consideration all the service rendered."

"But I shouldn't be expected to pay for the saving of some other fellow," we suggested. "No, you ought not to be taxed to pay for the schools for the neighbor's children either," was the response of the M. D. as he packed up his grip and started to brave the storm for a trip out into the country. "I wish I could afford to get a closed car for these trips."—*Kenosha Evening News.*

THE JOURNAL CLINIC

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SPLENIC ANEMIA, OR BANTI'S DISEASE.

ST. JOSEPH'S (MILWAUKEE) MEDICAL AND SURGICAL CLINIC.*

Dr. Louis F. Jermain.

Master P. H., age 15, was admitted to St. Joseph's Hospital October 25th, 1921. His family history was negative. There was no history of Jaundice. This boy has had small pox and measles.

Present trouble began four years ago with a fever

*Second Thursday of each month.

which lasted a number of weeks and was followed by marked enlargement of the spleen, general weakness and anemia. During the last four years the patient has had a number of these attacks of fever, lasting from one to three weeks. He has also had several severe attacks of nose bleed and gives a history of having had tarry stool, but no vomiting of blood. Physicians in his home town at one time made the diagnosis of pernicious anemia.

Physical Examination: Appearance pale, yellowish tan color of skin. Tan color of the skin is more apparent on the trunk than on the face and hands. Head is negative. Pupils equal and active. Teeth fair, some fillings. Tonsils fair. Neck—no palpable lymph nodes, no goiter. Lungs — no impairment of resonance: breath sounds normal. Heart—no enlargement; no mumurs; rhythm and rate normal. Spleen enormously enlarged, lower margin midway between umbilicus and pubic bone, right margin two inches to the right of umbilical line, splenic notch distinctly palpable. Liver slightly enlarged. No free fluid in abdomen. Axillary lymph glands palpable. Extremities negative. Reflexes normal.

Blood: Hemoglobin 65%; red blood cells 3,504,000; leucocytes 5,000.

Differential Count: Polymorphonuclears 69%; small lymphocytes 25%; large lymphocytes 2%; transitionals 1%; eosinophiles 1%; basophiles 2%. Color Index .9. Only slight variation in size and shape of red blood cells.

Urine—acid, amber; specific gravity 1026; no albumin; no sugar. Urobilinogen positive.

Blood coagulation time eight minutes. Bleeding time not increased.

DISCUSSION.

In a discussion of the differential diagnosis we are forced to take into consideration,-

First: Splenic anemia, or Banti's disease

Second: Gaucher's disease;

Third: Congenital hemolytic jaundice;

Fourth: Osler's or Vaquez's disease;

Fifth: Von Jaksch's anemia;

Sixth: The various types of leukemia.

The chronic course of the disease, interrupted at times with an acute febrile disturbance, the secondary anemia with a history of bleeding from the stomach, and the enormous enlargement of the spleen indicate that in all probability we are dealing with a splenic anemia, or a Banti's syndrome.

The absence of the characteristic discoloration of the exposed surfaces of the body, namely, face and hands, the absence of the wedge shaped, yellowish deposit on the ocular conjunctiva and the absence of leucopenia and normoblasts and myelocytes in the blood film would speak against Gaucher's disease.

There has been at no time in this case any reliable history of jaundice, nor a history of jaundice in the family, hence congenital, or familial hemolytic jaundice may be excluded.

The absence of cyanosis and polycythemia excludes Osler's or Vaquez's disease.

Von Jaksch's anemia may be excluded because of the fact that it usually occurs in early infancy and that the pernicious type of anemia usually present in these cases with a polymorphonuclear leucocytosis, or a lymphocytosis is absent.

Leukemia of any type is positively excluded by the presence in this case of a simple secondary anemia with practically normal differential counts.

We have, therefore, concluded that this boy is suffering from a splenic anemia and that the condition has as yet not fully reached the Banti stage.

The treatment has consisted in X-ray radiation of the spleen with a view of somewhat reducing its enormous size. This has, in a measure, been accomplished and today a splenectomy will be performed by Dr. F. A. Stratton on this boy.

In splenic anemia, or Banti's disease, in Gaucher's disease, in chronic congenital hemolytic jaundice and perhaps in Osler's or Vaquez's disease, splenectomy is indicated and in many instances is followed by a cure of the condition. In pernicious anemia splenectomy has been resorted to with rather indifferent, permanent results. In all splenomegalies associated with definite leukemic blood changes of whatever type, splenectomy is contra-indicated. Syphilis of the liver frequently responds much more promptly to treatment after splenectomy has been performed.

SPLENECTOMY

By Dr. F. A. Stratton.

In the treatment of splenic anemia, splenectomy has given excellent results, in fact, it is the only curative treatment for this disease. The operation should be done as early as possible after the diagnosis is made, because its dangers and difficulties increase with the course of the disease. The earlier the operation is performed, the lower the mortality rate, and the more rapidly the patient is restored to health.

As the disease progresses, the spleen becomes enormous in size, peri-splenitis develops with accompanying adhesions to surrounding structures,

especially to the diaphragm. Marked changes take place in the liver, all of which tend to increase the operative and subsequent mortality. Hemorrhages are also apt to occur at anytime, which lower the patient's resistance.

In selecting the time for splenectomy, one should be careful not to operate during, or too soon after, a severe hemorrhage. Also, if the spleen is enormous, efforts should be made to reduce its size with radium or X-ray, as has been done in this case, as the technical difficulties of the operation are thus materially lessened.

The dangers of splenectomy depend upon the condition for which the operation is attempted. When performed for traumatic or wandering spleen, or even in cases of pernicious anemia, or hemolytic jaundice, the spleen is not as large, and there are fewer adhesions to be dealt with, and in these cases the operation is comparatively simple. The operation in Banti's disease, offers greater difficulties than in any other condition. The principle danger of the operation is from hemorrhage, for, as we know, the spleen is an extremely vascular organ. You will note in this case, that the tumor extends considerably to the right of the median line, and below the umbilicus. We will make the incision along the outer border of the left rectus muscle, from the margin of the ribs almost to the pubic bone, and in order to give a free exposure, we extend the incision diagionally across the rectus to the ensiform. There are numerous adhesions between the great omentum and the abdominal wall; these are divided. The spleen is densely adherent to the abdominal wall and to the diaphram. Upon separating some of these adhesions with my fingers, there is considerable venous oozing, therefore, it is safer, I believe, to ligate the pedicle first. To expose the blood vessels, we must open the gastro-splenic omentum. I can see and feel several small accessory spleens in the mesentery near the pedicle. These vary in size from a pea to an English walnut. They are not at all uncommon. The pedicle is clamped off between two forceps, and the vessels are ligated separately as far as possible before the pedicle is divided. We now quickly separate the adhesions to the upper pole, and the tumor is removed. There is very little hemorrhage. The abdomen is closed in the usual manner without drainage. The operation while not simple, has not presented any unusual difficulties.

Note:- On the 6th day after the operation, patient's condition was excellent; normal pulse and temperature; feeling well.

Blood Exam: Reds, 5,355,000; Whites, 9,000; H. 70%.

Differential count: Normal. The marked increase in reds is rather unusual after operation.

Description of gross specimen:- Length, 21 cm Weight 860 gms. Thickness 8 cm. Width 14 cm. Firm consistency. Small accessory spleen size of pea near hilus.

ACUTE ILEUS PRODUCED BY A LARGE GALL-STONE.

Dr. Chester M. Echols.

This large gallstone, the size of a walnut, was the direct cause of acute intestinal obstruction in a 63 year-old woman who is now convalescent following its removal. Ileus from this cause has long been described in the text books of surgery, but its actual occurrence is exceedingly rare.

The patient's general health since her menopause about 18 years ago has been exceptionally good. She admits, however, that nearly a year ago she was laid up in bed for a few days on account of an attack of pain and soreness in the right half of the abdomen. This attack was not associated with vomiting or jaundice. Since then she has been in good health up to the time of the present attack.

Clinical Notes

Present attack began with a sudden onset five days ago of diffuse abdominal pain, followed by nausea and vomiting. Pain was worse in the right half of abdomen. Temperature remained below 100. Pulse only slightly increased. Pain did not become definitely localized. Laxatives and enemas produced no result except that on the third day of the illness there was an expulsion of a moderate amount of stool and flatus, after which the symptoms of ileus recurred and persisted up to the time of operation. A blood count made on the 4th day of her illness by the attending physician showed a white count of only 8400. In the 5th day her vomiting became stercoraceous.

When I first saw this patient on the 5th day of her attack, the vomiting was fairly frequent and had a pronounced fecal odor. I found her to be a well developed and nourished woman of 63 who looked somewhat younger than that. There was no suggestion of cachexia in her appearance.

Tympanites was pronounced but by no means extreme. There was considerable tenderness upon pressure over the entire right half of the abdomen but it was not localized in any one area. No peristaltic waves were visible. No tumor mass could be palpated. The character of the pulse, the absence of extreme rigidity, and the low leucocyte count all spoke against septic peritonitis. Naturally one must always bear in mind the possibility if not the probability of malignant growths as the cause of ileus in patients over 60 years of age. In this patient nothing pointing toward malignancy could be elicited.

A right rectus incision at the level of the umbilicus was chosen for the reason that it afforded a ready access to the gall bladder and appendiceal regions, in addition to permitting a fairly easy palpation of all the abdominal viscera. My first observation after making the incision was that there was no free fluid in the abdominal cavity. The presenting loups of small intestine were considerably distended and deeply injected. Palpation of the gall bladder showed it to be little more than a hard, shriveled-up atrophic cord, surrounded by a mass of adhesions and containing no calculi.

The appendix was perfectly innocent.

The uterus and adnexa were free from adhesions and showed the expected senile atrophy.

The exploring hand could locate no tumor, volvulus, or intussusception.

The large intestine was nowhere distended; indeed it was markedly collapsed. This was sufficient proof that the obstruction was proximal to the ileo-caecal junction.

During the examination of the appendix I had noticed that the terminal portion of the ileum was also collapsed, and was no thicker than my index finger.

The fact that the vomitus had a distinct fecal odor suggested that if the obstruction were not in the large bowel, it probably was at any rate in the terminal portion of the ileum where the colon bacilli are plentiful.

Systematic tracing of the ileum, beginning at the ileo-caecal junction, was obviously the most certain method of locating promptly the point of obstruction. Proceeding by this method, I came upon this large rough gallstone obstructing the ileum at a point between two and three feet away from the ileo-caecal junction.

How did a stone of this size make its way from the gall bladder into the bowel? By way of the cystic and common ducts? Certainly not. Unquestionably it eroded through the wall of the gall bladder and at the same time through the damaged wall of an adherent loop of gut, probably the duodenum. You will recall that in the course of this operation I found a mass of persistent adhesions about the gall bladder.

Someone asks how such a migration of such a stone and its accompanying pus is possible without the production of an extensive septic peritonitis. The sequence of events was doubtless as follows:

1. Slow formation of large gall stone bladder.

2. Development in succession of cholecystitis, empyema, and finally gangrene of gall bladder.

3. Coincident with 2, formation of dense adhesions between wall of gall bladder and adjacent structures, including loop of small intestine.

4. Erosion of stone through necrotic wall of gall bladder and weakened wall of adherent loop of gut (duodenum).

The slow movement of the stone through the great length of small bowel accounts for the incompleteness of the obstruction during the five days of the patient's acute illness preceding operation (She passed stool and flatus on the 3rd day).

Why should the stone become wedged in the ileum near its terminus? From purely anatomic reasons? Not only is the proximal part of the small gut of slightly greater diameter, but it is thinner-walled and more distensible than the terminal portion.

REPORT OF A CASE OF ERYTHROMALALGIA ASSOCIATED WITH POLYCYTHEMIA VERA.

FROM CLINIC OF DRS. EVANS AND BANNEN.

By James A. Evans, M. D., and A. A. Skemp, M. D.

Serial No. 13389.

C. C. Painful swelling of toes and left foot.

F. H. Negative.

P. H. In army hospital in France for dysentery, and again for "exhaustion". "Stomach trouble" two years ago.

P. I. The patient has always been of a ruddy complexion, but two years ago in France he first noticed

the red color became deeper and the face very sensitive and irritable. The face is more red in warm weather, and bluish in cold. Headaches began two months ago. Gain of twenty pounds in past two months.

Four months before entrance to hospital in Oct., 1920, patient first noticed pain in left big toe which soon spread to ball of foot and other toes. One month later he began to experience similar pain in toes of right foot. Two months later the toes on the left foot became red and their tips blue, remaining so ever since, and feel perpetually hot and burning. At the same time the left foot became swollen and so much more painful that patient walked with great difficulty. The toes on right foot became numb and cold.

P. E. Brick red complexion especially of face, lips, and both lower legs half way to knees. Conjunctivae injected. Right foot feels cold, left feels warmer than normal. Holds left foot up in air crossed over right knee while lying in bed or seated in wheel-chair and continually keeps one hand over left toes. Cannot bear to wear even a sock over great toe of left foot. Great toe, 2nd and 3rd toes on left foot bluish and tender to touch. Spleen barely palpable. Arteries sclerosed and slightly beaded. Blood pressure 170/120.

Laboratory Findings:

Blood: R. B. C. 9,200,000 to 12,000,000.
W. B. C. 7,800 to 14,000.
Hemog. 110% to 140% S.
Smear difficult to make on account of syrup like blood.
Differential: Lymphocytes 10%.
Neutrophiles 78%.
Eosinophiles 8%.
Transitionals 2%.
Myelocytes 2%.
Wassermann negative.

Urine: Night amount generally increased over day amount. Specific gravity generally below 1.018—acid. Trace of albumen. Sugar negative. Sediment contained few W. B. C. and R. B. C. and fine granular casts.

Basal Metabolism: Minus 8%.

Alveolar CO_2 tension 35 Mgm. Hg.

Treatment and Course in Hospital: Esmarch bandage applied to left thigh for two hours daily for five days with very slight but no permanent relief of pain.

Then the patient was put on K. I. grs. XV t. i. d. for three weeks with no marked results. Thyroid extract was tried three months without effect.

Bled 500 c.c. and injected intravenously with 1000 c.c. saline, and given twelve duodenal douches of 2000 c.c. each of saline in the next eighteen days. This treatment had no effect on the blood picture but slight improvement was noted of pain in the left foot.

A sympathectomy of the left femoral artery was now done and the artery stripped of the cob-web like tissue surrounding it for a distance of six inches. This procedure produced a measure of relief from pain for three or four days only.

Novocain 0.5% was injected into the tissues just proximal to the first meta-tarso-phalangeal joint around from the dorsal to the plantar aspect. This relieved the pain in the big toe but did not effect the vascular condition.

Next were given two X-ray exposures a week apart over the spleen, the last of which upset his stomach badly. At this time a note was made that swelling of left foot was less and temperature of foot normal. Also pain relieved sufficiently to permit sleep at night. Blood picture not improved.

Dry heat was next tried without relief. More X-ray over spleen and left foot was without avail.

Four and one-half months after the sympathectomy an atrophy of the left leg was noted, the thigh measuring three-fourths of an inch, and the calf one inch less than the corresponding parts of the right leg. On this day the left posterior tibial nerve was exposed, the internal plantor nerve identified and injected with 60% alcohol. Immediately after he had complete abscence of pain in sole of foot.

The patient has repeatedly been used as donor for transfusions, belonging as he does to group IV.

At the present date he still has considerable pain in the left foot with slight swelling and much redness of a bright brick color over left lower leg half way up to the knee. The atrophy is more marked measuring one and one-fourth inches less at the thigh, and one and three-eighths inches less at the calf than in the right leg. The skin is smooth, dry and glassy and warm to the touch. The nails are not atrophied. The spleen can no longer be felt. The blood picture has remained unchanged.

Amputation of the left leg below the knee gave complete relief 1 year after admission.

Case No 1, Serial No. 14205.

Herpes Zoster and Cholecystitis.

Patient, a married woman of 55, entered for relief of pain in right hypochondrium. Trouble under way for two weeks. Onset with very severe pains over the right lower thoraic region later moving into right hypochondrium and persisting there. There was occasional radiation to shoulder. No vomiting. No chronic dyspepsia, no icterus.

Patient was seen at her home twice before she was admitted to the hospital, each time with a pain in right hypochondrium that induced her to leave her bed and to walk about, and which required repeated doses or morphine to control.

She had herpes zoster 15 years ago; heart trouble for past eight years; nephritis in 1917. Examination upon admission revealed a definite tenderness over Mayo Robson's point; slight spasticity throughout entire upper right quadrant. The lungs were clear. Heart slightly enlarged. Its rhythm was often broken into by drop beats and extra systoles. Blood pressure was normal. Respiration, pulse ratio normal. Urine entirely negative, blood examination revealed nothing abnormal.

She was observed in hospital for several days. Pains in gall bladder region and back were persistent, morpine was often necessary, and the tenderness in the right hypochondrium was a constant finding. She was prepared for laparotomy and as she was being draped a group of vesicles were seen in the operative field. She was returned to bed, treated for herpes zoster and now she reports that she is without pain and without any untoward symptoms.

CASE NO. 2, SERIAL NO. 12798.

Hematemesis and Appendicitis.

Patient is a merchant of 38 years who was admitted to hospital in 1916 because of vomiting of blood. He had a profuse hemorrhage about May 1st; May 6th three to five hundred c.c. was vomited; and on the 7th of May he lost a similar amount. His red cell count was 1,744,000. Hemoglobin (Tallquist) 50%. He had no pain but there was slight tenderness in the epigastrium and to the right of the umbilicus. His history was negative excepting an experience milder though similar which he had in 1912. He was in hospital three and one-half weeks.

He was at his work, was symptomless though worried about his condition which was called gastric ulcer and seemed well in every way until June, 1920, when he began to vomit blood. The new storm came from the same clear sky that precipitated the others. When this subsided, careful fluoroscopic study of his gastrointestinal tract was negative.

His last admission in Nov., 1920, was for pain in lower right quadrant. A week before he had had severe diarrhoea with much mucus. Five days before he was nauseated and vomited frequently. Then came severe pain in lower right quadrant, tenderness, and finally a slight fever. A month prior a similar though milder attack was experienced.

Examination at time of admission revealed splinted musculature over lower right quadrant—tenderness here; white cells numbering 13,400 and rectal temperature of 100.4. Per rectum cul de sac was very tender.

Abdomen opened through Murphy incision. Upper abdomen explored with negative findings. Appendix found lying on top of caecum bound down by mass of adhesions necessitating removal from base first, and then blunt and sharp dissection delivered the inflamed structure out of the adhesions. Drainage established through stab wound in loin. The appendix was gangrenous throughout. Convalescence smooth and patient has been well in every way since.

Appendicitis not infrequently is obscured by hematemesis, a point recently re-uncovered by Butler in an article in the A. M. A. of July 8, 1921. The only explanation appended might be from the versatile, imaginative Dieulafoy:

"My researches on pneumococcal erosions and exulceratio simplex had taught me that the attacks of hematemesis consequent on these toxi-infections are due to ulceration of the arterioles ramifying under the muscularis mucosae. It is the appendicitis toxins which cause the gastric erosions and the consequent hematemesis."

PREVENTIVE MEDICINE

Edited by
W. D. STOVALL, Chairman
Section on Preventive Medicine, State Medical Society of Wisconsin

This Section is open to all members of the State Medical Society and others who wish to discuss subjects pertaining to Public Health. Original articles, and criticisms of statements appearing in this section are earnestly solicited. Questions concerning public health procedure will be answered. Address communications to Dr. W. D. Stovall, State Laboratory of Hygiene, Madison, Wis.

THE PREVENTION OF GOITRE.

BY ROBERT OLESEN,

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MADISON.

That goiter can be prevented has been definitely established. That the condition should be prevented is incontestable. This "human scourge, which has taken its toll in misery, suffering and death throughout the ages" is still tolerated as a necessary evil in many communites. In the future, however, the presence of goiter in a locality will be regarded as evidence either of gross indifference or failure to apply thoroughly dependable preventive measures.

For its knowledge of the means of preventing goiter the world is largely and most directly indebted to two American investigators, Dr. David Marine of New York City and Dr. O. P. Kimball of Cleveland. In presenting the method of goiter prevention the published articles of these two workers have been freely abstracted.

Believing that the people of Wisconsin should be conversant with the latest developments in the field of preventive medicine the facts herein presented will shortly be made the subject of a special bulletin by the Wisconsin State Board of Health. At the same time it is felt that the physicians of the state, who will be called upon to supervise the administration of the prophylactic should likewise be familiar with the rationale of the procedure. In order that the need for goiter prevention may be more adequately appreciated something should be known of the cause, prevalence and manifestations of this disease. It has been the aim so to

discuss the subject as to enable an intelligent understanding of the factors involved. In so far as practicable theoretical discussions have been eliminated.

FACTS ABOUT GOITER PREVENTION.

What is Goiter?

Simple goiter may be defined as a chronic enlargement of the thyroid gland. The thyroid gland is composed of two wing-shaped portions, one on either side of the neck. These two portions are united by a narrow band which passes in front of the trachea and near the Adam's apple. Normally the gland is not visible or only faintly so.

In the beginning it must be clearly understood, especially by physicians, that this entire discussion is confined to simple or endemic goiter. The matter is in no wise related to exophthalmic goiter, which is an entirely different malady.

The Prevalence of Goiter.

Goiter is more prevalent in some districts than others. On our own continent it is more frequently encountered in the Great Lakes Basin and the Cascade Mountain regions of Oregon, Washington and British Columbia. Even in these regions, however, the malady is notably milder than the forms found in the Alps and Himalaya regions.

Goiter is at least 6 times more frequent among females than males, hence the necessity for greater attention to the former. The disease most commonly develops during one of the following formative periods,

1. During fetal life.
2. Around the age of puberty.
3. During pregnancy.

Marine and Kimball are emphatic in declaring that goiter in the mother and fetus can be prevented as easily as that in the adolescent. Furthermore, they contend that the prevention of goiter in childhood is a public health problem, best handled in the schools. On the other hand, the prevention of goiter in the mother and fetus had best be undertaken by the family physician.

The Cause of Goiter.

Notwithstanding the great amount of study that has been devoted to the problem it may be stated authoritatively that the ultimate cause of goiter is unknown. The immediate cause, however, is a lack of *IODIN*. This fact has been conclusively established through experimentation, first with brook trout and later with cattle, sheep, pigs and poultry. Still later the results of iodin administration to school children lent indisputable evidence of the accuracy of the previous observations.

The enlargement of the thyroid gland may be regarded as a symptom indicative of an increase in the iodin needs, of interference with the normal utilization of available iodin or experimental deprivation of iodin. In any event the result is the same, goiter.

The theory that goiter is infections or transmitted from person to person in the same family is no longer tenable and should be abandoned.

That water is responsible for goiter is a view widely adhered to in the past and also at present. It is not possible to dismiss this theory lightly. However, if water is a factor, it is probably due to the absence rather than the presence of the goiter-producing substance. Goiter is associated with the purest of waters. This has been particularly demonstrated in the experience of the Puget Sound cities, in which there has been a rapid increase in goiter since the bacteriologically and chemically pure Cascade Mountain water has come unto use.

The most plausible explanation and the one most readily supported by experimental evidence is that goiter is the result of a relative or absolute deficiency of iodin.

Some Practical Results of Goiter Prevention work.

To those interested in the experimental studies through which the efficiency of iodin in preventing goiter was established the published work of Marine, Lenhart, Kimball and Klinger will prove exceedingly interesting. For the purpose of the present pamphlet, however, it appears sufficient to recount the experiences with school children in Akron, Ohio. The practicability and reliability of the iodin prophylaxis was clearly demonstrated over a period of two and one-half years. The method was applied solely to school girls because of their greater need.

Of 2190 pupils taking the prophylactic treatment twice yearly only 5 or 0.2 per cent developed enlarged thyroids! On the other hand 495 pupils

or 21.4 per cent of a group of 2305 who did not take the treatment showed various degrees of thyroid enlargement.

In a group of 1182 pupils with definite thyroid enlargement at the first examination 773 children or 65.4 per cent showed a reduction in the size of the gland after receiving the prophylactic. Another group of 1048 pupils with enlarged thyroids, in which no iodin was administered, showed an apparently voluntary decrease in the size of the gland in 145 children a percentage of 13.8. The striking preventive and curative results of the iodin prophylaxis are clearly demonstrated by these figures.

The Method of Using Iodin Prophylaxis

The means by which goiter may be prevented and also cured after it has made its appearance is so simple that many persons may regard it as inadequate. The treatment should begin when the child enters the fifth grade, at which time the average age is 10 or 11 years. If possible the routine treatment should be continued until the age of 17 years is reached.

The method is simple, consisting of the administration of 2 grams (approximately 30 grains) of sodium iodide in 0.2 gram (3 grains) doses over a period of 2 weeks. This treatment is repeated each spring and autumn. So long as iodin remains an active ingredient of the medication other preparations such as syrup of ferrous iodide or syrup of hydriodic acid may be substituted for sodium iodide. However, the last named material is so cheap, easy of administration and efficient that it will ordinarily be the medication of choice.

It is recommended that goiter prophylaxis be carried out under the constant direction and supervision of reputable physicians. If this injunction is observed there is less likelihood of untoward results.

Untoward Results Of Sodium Iodide Administration.

With the exception of occasional transient and mild skin rashes no deleterious effects have been noted as a result of the administration of sodium iodide. There is absolutely no evidence that the prophylaxis is responsible for the appearance of the more severe affection known as exophthalmic goiter.

What The Prophylaxis Will Do.

To many persons goiter means simply an enlargement of the gland in the neck unaccompanied by disturbing symptoms. The fact that goiter is a frequent cause of mutilating and serious operation often escapes attention. Then too, the close relation between thyroid insufficiency and cretinism, mutism and iodicy are usually overlooked. Ninety per cent of certain tumors, at first benign but later malignant, are essential parts of goiter. Nor should the high mortality of infants with congenital goiter be forgotten when the subject is under consideration.

If the conditions cited can be prevented, and it is now definitely known that they can, it would constitute negligence little short of criminal, to fail in the application of the simple, rational and cheap prophylactic recommended by Marine and Kimball.

PUBLIC HEALTH NEWS ITEMS.

Census figures credit Wisconsin with a slight increase of tuberculosis deaths for 1920, the year's tuberculosis mortality, 2,267, being 65 in excess of 1919. The rate was 85.6 per 100,000 population, as against 84.1 for 1919. On the other hand, this is a marked falling off from former years. Only four years before (1916), Wisconsin's tuberculosis death rate was 92.1; in 1917 it was 97.3, and in 1918 it was 94.4.

For the death registration area of the U. S. in 1920, nearly 100,000 deaths were due to tuberculosis, and if the rest of the country has as many deaths from this cause in proportion to the population, the total number of deaths from tuberculosis in the entire United States was about 122,000, while for 1919 the number is estimated as 132,000. The trend of the tuberculosis death rate is distinctly downward.

With cancer the trend is not so favorable. In Wisconsin, as in the country generallly, cancer mortality is on the increase. In 22 states the rate in 1920 was higher than for any earlier year. Northern states have higher cancer death rates than the southern.

Wisconsin, with 2,335 cancer deaths in 1920, exceeded 1919 by 50 deaths. The death rate was 88.2 per 100,000 population, as compared with 87.3 for 1919. For the registration area this rate was 83.4. Wisconsin's cancer mortality

therefore is appreciably higher than for the country generally.

The trend, in Wisconsin and other states, of the death rate from organic diseases of the heart is upward. In the registration area there were 124,000 such deaths recorded in 1920, a rate of 141.9. In Wisconsin 3,055 such deaths were recorded, as against 2,652 in 1919, with a death rate of 115.3, as compared with 101.3 for the previous year.

Cases of influenza must be reported and placarded, even though they are sporadic and of mild type, and no epidemic prevails.

A man in a northern city was informed that for refusing to furnish a physician with information necessary to complete a birth certificate he was liable to a fine from $20 to $200. Further failure in this regard was ground for prosecution, he was warned.

A teacher in quarantine, with the school closed for smallpox, is entitled to salary during that period provided she holds herself ready at all times to continue her school work. This position is taken by the state department of public instruction, which has jurisdiction in such matters.

Diphtheria antitoxin and other biological products can be bought from any local distributor or from the state board of health in Madison, who keep supplies of these constantly in stock.

A health officer's action in refusing to recognize the negative cultures (diphtheria) obtained from a private laboratory which is not on the list sanctioned by the state board, was upheld as correct. The law requires that in case of dispute the findings of the state hygienic laboratory shall be accepted in proof.

No child having tuberculosis should attend school if a recovery is expected. Under the law, tuberculosis of the lungs in teacher or pupils bars attendance at school.

A permit to prescribe morphine or other narcotic drugs for the sick is not issuable from the state board of health, but must be applied for at the office of the internal revenue collector at Madison or Milwaukee.

It is unlawful for a governing body to assess the cost of placarding, quarantining and disinfection against a family. This is a public responsibility and is required to be borne by the city, village or town treasury.

Tuberculosis is a reportable disease, but is not quarantined nor placarded.

Miss Palma H. Grahn, formerly county nurse of Sauk County, was appointed county nurse for Vernon county by the county health committee, upon certification by the state board of health. Salary of $1,800 and expenses of $1,000 are allowed. Miss Florence Hoesly was appointed county nurse for Eau Claire county.

A northern rural school, with scarlet fever rampant, was closed shortly before Christmas until after the holidays, a Christmas entertainment called off, and the school ordered disinfected in the meantime.

In the disinclination of any physician to act as local health officer, the appointment of the county nurse as such official is not inadvisable from many points of view.

Release of "contacts" from quarantine must be accomplished through state laboratory evidence. Deputies' reports show some physicians attempt to make their own bacteriological examinations. State cooperative laboratories are now established in practically every section of the state to facilitate such analyses.

Cases of chickenpox must be placarded and children afflicted can not leave the premises or come in contact with the general public.

Fumigation of books from infected homes is accomplished best by the medium of "time and sunlight." Formaldehyde fumigation alone is called insufficient. Such books should also be withheld from circulation for 15 days in the case of the usual communicable diseases except tuberculosis, in which case their destruction or withholding from circulation for one month are recommended.

Where both parents are dead and there is no guardian, a birth record may be filled out by the attending physician, or by any near relative having full knowledge of the facts.

The provisions of the Shepard-Towner act of congress were accepted for Wisconsin by Governor Blaine. The child welfare division of the State Board of Health will supervise its administration in Wisconsin. The sum of $32,751 is Wisconsin's share of the fund for the first year, ending June 30, 1922. This legislation is designed to promote maternity protection and child welfare, especially in neglected portions of the state where physicians and nurses are few and other obstacles to healthy living are encountered.

DEATHS OF PHYSICIANS IN 1921.

During 1921, the deaths of 2,286 physicians in the United states and Canada were recorded in the J. A. M. A. Adding 2.5 per cent to this number on account of delayed reports and possible omissions, we may estimate the total number of deaths as 2.343. On an estimate of 160.000 physicians in the United States and Canada, this is equivalent to an annual death rate of 14.65 per thousand. The average annual mortality rate for the period from 1902 to 1921, inclusive, is 15.05.

Ages.—Of the 2.118 decedents whose age was stated, 29 were under 30; 160 between 31 and 40; 298 between 41 and 50; 409 between 51 and 60; 571 between 61 and 70; 393 between 71 and 80; 240 between 81 and 90; 17 between 91 and 100, and one lived to the age of 101. The greatest number of deaths for a given age accurred at 66 years, at which age seventy-one deaths were noted.

Causes of Death.—Of the 2.009 known causes of death, 426 were from diseases of the heart and circulatory system. General diseases accounted for 290 deaths. Of these, 128 were from carcinoma and sarcoma, 47 from tuberculosis, 29 from septicemia, 24 from diabetes, 15 from typhoid fever, 14 from anemia, 8 from diphtheria, and 25 from other infectious diseases. Cerebral hemorrhage caused 196 deaths; paresis, 37; meningitis, 18; neuritis, 14; epidemic encephalitis, 11, and other diseases of the nervous system, 8. Pneumonia claimed 167 victims; influenza, 19; bronchitis, 11, and other diseases of the respiratory system, 11. Appendicitis caused 32 deaths; cirrhosis of the liver, 19; gallstones, 17; stranglulated hernia, 13; peritonitis, 12, and other diseases of the digestive system, 79 deaths. Chronic nephritis accounted for 79; acute nephritis, 26; uremia, 23, and other diseases of the genito-urinary system, 18 deaths. Various diseases of the bones caused 9 deaths; diseases of the skin, 3; senility, 213; sequels to operations, 91, and 38 were due to complications not specified.

Accident and Homicide.—The causes and distribution of the ninety-seven deaths from accident were: automobile-railway (grade crossing), 22; automobile, 19; firearms, 17; railroad and street cars, 14; drowning, 6; poison, burns, falls and fractured skulls, each, 4; runaway team, kick by a horse, and electrocution by roentgen ray while treating patient, each, 1. All of the nineteen homicides were due to firearms; of these, six physicians were shot by bandits and one (colored) shot in a race riot. One physician was electrocuted on conviction of the murder of his wife.

Suicide.—The sixty-nine physicians who ended their lives by suicide selected these methods; poison, 29; firearms, 19; jumping from high places, 7; cutting instruments, 5; drowning, 4; asphyxiation, 3; strangulation, 2.

Civil Positions.—Among the decedents who held civil positions, 1 had been lieutenant governor (acting state governor for one year); 39, members of the state legislature; 34, mayors of cities; 35, members of boards of health; 15, members of state boards of medical examiners; 19, members of U. S. pension boards; 4, postmasters, and 1, a member of the Canadian parliament. —*Jour. A. M. A.*, Jan. 7, 1922.

PRESENT-DAY SOURCES OF COMMON SALT IN RELATION TO HEALTH.

Emery R. Hayhurst, Columbus, Ohio (*Journal A. M. A.*, Jan. 7, 1922), comments on the natural deficiency of iodin in diets; yet its scarcity in nature has been long known to geochemists, as well as its infrequency of occurrence in salt sources by commercial and industrial chemists. While iodin may occur in natural deposits along with chlorin, usually in the form of the sodium salt, it is never obtained from such sources commercially because it occurs in too limited quantities. Chili saltpeter is the chief source of iodin. The sea is the great storehouse of iodin where it completes a cycle from inorganic compounds to organic life and return. The salts of sea water are constant in both quality and quantity. Sodium chlorid comprises 77.8 per cent, magnesium chlorid 10.9 per cent, with many compounds, including sodium iodid, which composes the remaining 11.3 per cent. It has an average total salinity of 3.4404 per cent. All of the salts in sea water are unusually soluble in plain water. The great solubility of sodium iodid accounts for its almost complete absence from the land surface and, perhaps, for some of the peculiarities noted in regard to the incidence of goiter. Authorities are agreed that goiter is infrequent in both animals and man along the sea. The same is true, also, of some fishes (salmon) which inhabit both fresh water and sea water, tending to develop goiters in the former, and none in the latter. Apparently, sea animals do not have goiter. Practically all salt used in the United States for dietary consumption is obtained from inland sources by the evaporation of brines, which for the most part are inherently free of iodin. Irrespective of the source, whether sea water or inland deposits, the modern processes of preparing and purifying salt free it from all traces of iodin, as well as its other naturally associated elements, many of which are identical with the body fluids of higher animals. Hayhurst points out that of the dependable sources of iodin in nature—sea air, sea food and sea water—it is to sea water, used perhaps in place of common salt as a condiment, that inland dwellers should look. This substitution would appear to offer a complete solution to the iodin deficiency problem, if nothing else, while evidence would tend to show that other constituents of sea water have also an undoubted place in the economy of the higher animal organisms, perhaps to the extent of precluding some diseases which are likewise, possibly, of a deficiency type. Common salt for dietary purposes should include not only sodium chlorid but also sodium iodid, and undoubtedly many of its other original concomitants. For geochemical reasons, great care should be taken in selecting its source, if it is not actually derived always from sea water. It must then be handled commercially in a manner to retain these constituents.

INJECTION OF BILE DUCTS WITH BISMUTH PASTE.

Charles F. Tenney and S. H. Patterson, Toledo, Ohio (*Journal A. M. A.*, Jan. 21, 1922), relate the case of a man on whom a cholecystectomy was performed. The patient made an uneventful recovery from the operation, but a permanent biliary fistula resulted. In order to determine the extent of the fistulous tract and its relations to the duodenum, the duodenal tube was passed and a small amount of milk, containing barium, was injected into the tube, to make clear its outline. At the same time, three-fourths the contents of a 1-ounce tube of bismuth paste was injected into the external opening of the fistula. The paste passed in with slight pressure and caused no pain. A roentgenogram was immediately taken; and it was found that the liver ducts were extensively injected with bismuth paste. Before the second picture was taken (fifteen minutes later), the patient was given buttermilk and barium to drink, so that the stomach might be outlined and assurance had that the duodenal tube was in the duodenum. This was found to be correct, and it was further shown that there was no connection between the fistulous tract and the alimentary canal. The obstruction was apparently at the junction of the hepatic with the common duct. Immediately after the injection of the bismuth paste the patient developed discomfort in the region of the liver. It gradually grew worse and in twelve hours he began to have extreme distress, and morphin was required to relieve the pain. In twenty-four hours he had developed jaundice. At the end of thirty-six hours, the paste gradually began to come out through the external opening, the bile began to flow, and the distress of the patient was much less. The third roentgenogram, taken at this time, showed the paste, which had extended to the margin of the liver, to be disappearing; and the tube, which was given the patient to swallow fifteen minutes previously, to be looped in the stomach. Two days after the injection of the paste, the jaundice was less and the patient had no discomfort. More of the paste came out, and the bile began to flow freely. On the fourth day the liver was almost free from bismuth. The patient was apparently no worse for the mechanical obstruction to his liver for a period of forty-eight hours.

CURE OF INFANTILE RICKETS BY SUNLIGHT.

Nine rachitic infants were placed by Alfred F. Hess and Margaret B. Gutman, New York (*Journal A. M. A.*, Jan. 7, 1922), in the direct sunlight for from one-half hour to several hours, the period varying according to the sun's intensity, the clemency of the weather, and the sensitiveness of the baby. Care was taken that the infants were warm. It was found quite sufficient to expose the arms and legs, although it is preferable, when the temperature permits, to expose the trunk as well. Previous to treatment, the majority of infants showed the clinical symptoms of mild rickets, characterized by beading of the ribs, and the characteristic changes in the epiphyses as seen by roentgen-ray examination. All the children were receiving the customary milk mixtures and orange juice, the older ones getting cereal in addition. Reliance was not placed entirely on the roentgen-ray examination of the bones. In every instance in which heliotherapy was employed, the rachitic signs diminished, as was demonstrated clinically and by roentgen ray, and the general condition improved. The inorganic phosphorus of the blood of the rachitic infants decreased from month to month, starting generally below 3.5 mg. per hundred cubic centimeters of blood, and gradually being restored to the normal level of about 4 mg. This result is similar to that which has been attained by means of cod liver oil, which must be considered a specific for this disorder. This observation is of interest both as additional testimony of the curative value of sunlight in this disorder, and as evidence that the curative process occasioned by these divergent therapeutic agents will probably be found to be fundamentally the same. These results establish a chemical basis for the use of heliotherapy in rickets. Furthermore, they furnish the first definite evidence of metabolic change in the animal body brought about by the solar rays.

GIGANTISM WITH HEMORRHAGIC OSTEOMYELITIS OF A METACARPAL BONE.

Maurice Packard and George Barrie, New York (*Journal A. M. A.*, Jan. 7, 1922), report on endocrinal case of so-called preadolescent hyperpituitarism, presenting all the stigmas of gigantism. Of great additional interest is the fact that the patient presented a localized lesion involving one of the metacarpal bones. The process in this bone gave all the clinical and roentgenographic criteria of a hemorrhagic osteomyelitis and may be regarded as evidence of reaction to a destructive or injurious process that has taken place in spongy bone. This reaction gives all the known criteria of an attempt at repair, the lesion itself being the outcome of such incomplete or unsuccessful reparative effort.

FAULTY FOOD IN RELATION TO GASTRO-INTESTINAL DISORDER.

The thesis is propounded by Robert McCarrison, London, England (*Journal A. M. A.*, Jan. 7, 1922), that much of the gastro-intestinal disorder of civilized peoples of the present day is due to faulty food. He presents evidence of the incidence of such disorder among civilized communities and of its comparative absence among certain races living under more natural conditions; and contrasts, in general terms, the food habits of the former with those of the latter. He refers to the special relation of perfect food to the functional perfection of the gastro-intestinal tract; and from these sources advances presumptive evidence of the effects of faulty food in impairing the functional perfection of the digestive system. Experimental evidence of these effects is given, and attention directed to the applicability of the experimental results to the genesis of certain acute

and chronic gastro-intestinal disorders. McCarrison asserts that faulty foods capable of causing similar effects in man to those produced experimentally in animals are widely made use of at the present day. In guarding the national health, McCarrison says physicians have three obvious duties: the first, to instruct the masses as to what to eat and why they eat it; the second, to apply the results of science to the production of natural foods in abundance and to their widespread and cheap distribution, rather than to the erection of institutions for the treatment of maladies due to their want; the third, and most important, ardently to pursue investigations and the acquirement of knowledge.

RADIUM TECHNIC IN TREATING CANCER OF ESOPHAGUS.

While the results of radium treatment of cancer of the esophagus are not all that could be wished for, yet C. W. Hanford, Chicago (*Journal A. M. A.*, Jan. 7, 1922), says they are of such a nature that we are hopeful for better things as time goes on. In a series of fifteen cases, he points to but four as seeming cures; however, all patients were benefited by the first series of treatments. The dysphagia, which exists in almost all cases, is relieved very soon after the first treatments. This freedom from pain will continue for some time; but in the majority of cases, it will return, and the second treatments will not have the same salubrious effect that the first did. Still, a sufficient number to demand intervention with radium are relieved by subsequent treatments. Of the series mentioned, excluding the four who are cured, five patients went one year without recurrence. One of the five had no recurrence for a year and a half. These five patients are still under treatment. It is Hanford's custom to repeat the treatment in from three to four weeks after the first. In favorable cases, a roentgenogram taken just before the second treatment will show a larger lumen, and less irregular outlines. In this type of case, weight has been gained and the patient has a sense of general well-being. The patient is instructed to return for examination at the slightest sign of recurrence. That a more perfect system of dosage is required is admitted.

HEAVY BREASTS AS A FACTOR IN THE PRODUCTION OF FAULTY POSTURE.

C. L. Lowman, Los Angeles (*Journal A. M. A.*, Jan. 21, 1922), is of the opinion that neuritis and various forms of bursitis in the shoulder girdle region may be caused by heavy breasts. When the breasts are abnormally heavy and the tone of the back and shoulder muscles is lessened the weight of the breasts pulls the shoulders downward and forward, and by spreading the scapulae, stretches the rhomboid muscles, and often produces irritation along the spinal column in the region of their insertion. To overcome this condition, Lowman has devised a special brassiere which controls excessive breast movement and supports and corrects pendulous breasts without producing atrophy. It also protects from irritation and trauma against the top of the corset. It serves as a prophylactic aid to corrective clothing in the fight for correcting the present vicious habit of compression which results in atrophy of the breast. It relieves pain in nursing mothers and during menstrual periods. It supports during the periods of pregnancy and lactation and is an aid in the period of evolution, preventing the pendulous condition so common after childbearing. It acts as a control of shoulder girdle position and is an aid in the correction of spinal alinement.

SIMPLIFIED METHOD FOR CALCULATING OPTIMAL DIABETIC DIET BY METHOD OF WOODYATT.

In the opinion of William H. Holmes, Chicago (*Journal A. M. A.*, Jan. 7, 1922), Woodyatt's calculations seem to be a conservative appraisal of the metabolic processes involved in the oxidation of ketogenic acids. It is unforunate that the application of his hypothesis as originally presented requires the use of complicated equations. Simplification of calculation so that all the necessary information can be obtained by simple addition and subtraction is desirable. Holmes has attempted to simplify the method of calculation by the preparation of tables which may be used as such, or which may be adapted to the slide rule.

TRANSFUSION REACTIONS AND CITRATION WITHIN NEEDLE.

Frank W. Hartman, Temple, Texas (*Journal A. M. A.*, Jan. 7, 1922), maintains that nonhemolytic transfusion reactions are largely due to incipient coagulative changes in the transfused blood. These changes are probably caused by injury to the platelets with the formation of thromboplastin and thrombin. To prevent injury to the platelets one should avoid contact with foreign substances as far as possible, avoid aeration and loss of body heat, and add the anticoagulant as the blood leaves the vein of the donor. An apparatus is described by Hartman which is compact and easily manipulated: it citrates the blood within the needle. The employment of this apparatus has reduced the number and severity of reactions 50 per cent.

SPONTANEOUS LABOR IN A CASE OF DECENTRALIZED UTERUS.

Dan Collier Elkin, Boston (*Journal A. M. A.*, Jan. 7, 1922), reports a case of pregnancy with normal and spontaneous labor occurring in a woman with a decentralized uterus the result of spinal cord disease. The woman had cervical Pott's disease, with an almost complete transverse lesion of the seventh cervical segment. Pregnancy went to full term, when normal and almost painless labor occurred. Cases of this kind serve to place the uterus among the autonomic organs of the body and indicate that the initial stimulus to labor originates by some other mechanism than cerebral control.

THE STATE MEDICAL SOCIETY OF WISCONSIN

ORGANIZED 1841

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Columbia	W. J. Thomson, Portage	John Bentley, Portage.
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Dodge	F. T. Clark, Waupun	A. E. Bachhuber, Mayville.
Door	H. C. Sibree, Sturgeon Bay	T. C. Proctor, Sturgeon Bay.
Douglas	T. H. Shastid, Superior	F. J. Broghammer, Superior.
Dunn-Pepin	F. E. Butler, Menomonie	J. Blom, Menomonie.
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Grant	G. C. Buck, Platteville	M. B. Glasier, Bloomington.
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Green Lake-Waushara-Adams	G. E. Baldwin, Green Lake	A. J. Wiesender, Berlin.
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Marinette-Florence	J. V. May, Marinette	C. H. Boren, Marinette.
Milwaukee	P. H. McGovern, Milwaukee	Dan. Hopkinson, Milwaukee.
Monroe	W. S. Waite, Kendall	C. D. Beebe, Sparta.
Oconto	R. J. Goggins, Oconto	C. J. Ouellette, Oconto.
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Waupaca	E. H. Jones, Weyauwega	A. M. Christofferson, Waupaca.
Winnebago	F. G. Connell, Oshkosh	H. W. Morgenroth, Oshkosh.
Wood	D. Waters, Grand Rapids	W. G. Sexton, Marshfield.

SOCIETY PROCEEDINGS

BARRON-POLK-WASHBURN-SAWYER-BURNETT COUNTY

A meeting of the Barron-Polk-Washburn-Sawyer-Burnett County Medical Society was held at Cumberland, Wisconsin, Tuesday afternoon, February 7th. Two clinical cases were presented, one a case of sarcoma under treatment with Cooley's Fluid and the other, a partially recovered case of Encephalitis Lethargica. The following program was then given: "Treatment of Burns," Dr. Cristman of Almena; "Diseases of the Rectum," Dr. Galloway, Clayton; "Treatment of Diseases of the Prostate," Dr. F. J. Plondke, St. Paul, and "Treatment of Deformities and Diseases of the Hipjoint," illustrated with X-ray pictures, Dr. Chatterson, St. Paul.

D. L. Dawson, M. D., *Secretary.*

DANE COUNTY MEDICAL SOCIETY

At the annual meeting of the Dane County Medical Society held at the Y. M. C. A., Madison, January 10th, the following officers were elected for 1922. President, Dr. Homer M. Carter; vice-president, Dr. Roger T. Cooksey; secretary, Dr. Albert Thormey; censor, Dr. S. R. Boyce, and delegate, Dr. H. P. Greeley.

DUNN-PEPIN COUNTY.

The annual meeting of the Dunn-Pepin County Medical Society was held December 16, 1921. Members present were Drs. N. L. Howison, I. V. Grannis, F. E. Butler, K. T. Meyer, J. Blom, L. H. Van Slyke and Wm. Lumsden. Interesting cases were reported by Drs. Van Slyke, Howison, Meyer, and Grannis and generally discussed. The election of officers for 1922 resulted as follows: President, F. E. Butler; vice-president, L. H. Van Slyke, and secretary-treasurer, J. Blom. Dr. N. L. Howison was elected as a member of the board of censors for a term of one year, Dr. I. V. Grannis for two years and Dr. Wm. Lumsden for three years. A resolution was passed favoring making Dr. J. J. Morgan of Durand an honorary member of the society and the secretary instructed to pay his dues from the general fund of the society.

F. E. Butler, M. D., *Secretary Pro tem.*

GRANT COUNTY MEDICAL SOCIETY

The annual meeting of the Grant County Medical Society was held January 12th, the election of officers resulting as follows: President, Dr. G. C. Buck; vice-president, Dr. D. H. Andrews; secretary, Dr. M. G. Glasier; delegate, Dr. J. C. Betz, and censor, Dr. E. H. Spiegelberg.

M. B. Glasier, M. D., *Secretary.*

MANITOWOC COUNTY

The Manitowoc County held its annual meeting at the Holy Family Hospital, Manitowoc, January 26th, which was opened by a dinner at which the Sisters of the hospital were hostesses. Plans for a campaign for a new hospital building to be erected as an addition to the hospital were fully discussed. Dr. A. M. Farrel, Two Rivers, was re-elected president of the society for 1922, Dr. E. Gates, Two Rivers, vice-president, and Dr. V. V. Kellner, Maribel, secretary-treasurer.

MARINETTE-FLORENCE COUNTY.

The regular meeting of the Marinette-Florence County Medical Society was held January 25th at the M. and M. Hospital, Marinette, at which the physicians of Menominee were guests. Dr. M. D. Bird gave a splendid talk on appendicitis which was discussed fully by the different members. Dr. R. A. Walker, Menominee, gave an address on the progress of medical science, Dr. C. H Boren, Marinette, presented a case of bone disease o the ribs illustrated with X-ray plates, and Dr. A. T Nadeau presented a case of bone injury to the foot.

MILWAUKEE MEDICAL SOCIETY

The regular meeting of the Milwaukee Medical Society was held at the Health Service Building, Milwaukee, Tuesday, January 24th, preceded by a meeting of the Council. Several clinical cases were presented, followed by an address by Dr. Hugh Patrick, Chicago, on "The Differential Diagnosis between Organic and Functional Diseases of the Nervous System," and a paper on "Some Obscure Conditions which produce Oral Sepsis," by Dr. M. M. Federspiel. A special invitation to the interns of local hospitals and medical students to attend the meetings of the society was issued.

L. G. Sykes, M. D., *Secretary.*

WAUKESHA COUNTY

At the regular meeting of the Waukesha County Medical Society held in December, the following resolution was unanimously passed: "Whereas, the method of organization and practices of the Wisconsin Anti-Tuberculosis Association have been brought into question by one of our members at our last meeting, Resolved, That we, the members of the Waukesha County Medical Society, approve and endorse the Wisconsin Anti-Tuberculosis Association and promise it our professional and financial support."

S. B. Ackley, M. D., *Secretary.*

NINTH COUNCILOR DISTRICT.

The winter meeting of the Ninth Councilor District Medical Society was held at St. Joseph's Hospital, Marshfield, Wisconsin, Thursday afternoon and evening, January 26, 1922.

Program.

Afternoon Session.

1:30 Medical Clinic—Dr. L. M. Warfield, Milwaukee
4:30 X-Ray Clinic—Dr. C. A. H. Fortier, Milwaukee

Discussion opened by Dr. R. P. Potter, Marshfield.
6:30 Banquet—St. Joseph's Hospital.

Evening Session—7:30.

1. "Appendicitis Simulated by Cutaneous Hyperesthesia and Ureteral Calculus," Dr. Geo. F. Thompson, Chicago.
2. "The Treatment of Cardiac Disease," Dr. L. M. Warfield, Milwaukee.

Discussion opened by Dr. H. H. Milbee, Marshfield.

3. "Subcutaneous Rupture of the Liver," Dr. David C. Strauss, Chicago.
4. "Pregnancy Complicated by Pyelitis; Diagnosis and Treatment," Dr. W. G. Sexton, Marshfield.
5. "Some Phases of the Etiology and Diagnosis of Toxemia of Pregnancy," Dr. H. A. Jefferson, Clintonville.

A dinner was served at 6 o'clock at the hospital at which about fifty were present.

JOSEPH F. SMITH, M. D., *Secretary.*

PREOPERATIVE TREATMENT FOR POSTOPERATIVE COMFORT.

The technic employed by Samuel J. Glass, Jr., and H. Stanley Wallace, Pittsburgh (*Journal A. M. A.*, Jan. 7, 1922), consists of a preliminary alkaline treatment of sodium bicarbonate and lactose for several days before operation in order to have the patient thoroughly saturated with the carbonate. Immediate preoperative treatment is essentially that of Gwathmey, which consists of a hypodermoclysis of a 4 per cent chemically pure and sterile solution of magnesium sulphate, 200 c.c. given one and one-half hours before operation, and morphine sulphate, from 1/10 to ⅛ grain in 1.5 c.c. of a 25 per cent chemically pure and sterile solution of the magnesium sulphate given at fifteen minute intervals for two or three doses, starting one and a quarter hours before operation. The patient is then kept in a darkened, quiet place, and very gently removed to the anesthetizing room, where the general anesthetic of ether by the drop method is commenced. The patient is practically in a state of analgesia and the excitement stage is nil. The pulse usually is slow at first, rising somewhat in the second stage, but returning to a lower rate during the operation. There is very little paresis of the intestine, and there are less acidosis and nausea, with vomiting practically eliminated except when the gall bladder has been emptied or removed. The synergistic analgesia is prolonged. The amount of ether used is lessened, thus reducing to a minimum bronchial and renal irritation, and causing less acidosis. There is no distention and no gas pain. There have been no deleterious results, such as abscess, necrosis of tissue or laxative effect. With the alkaline synergistic method, the postoperative condition is entirely altered. There is an absence of gas and wound pains and no distention, which with subsequent improved appetite and lessened mental depression makes convalescence shorter and more agreeable.

ASSOCIATION NEWS

MINUTES OF THE MEETING OF THE COUNCIL OF THE STATE MEDICAL SOCIETY OF WISCONSIN.

University Club, Milwaukee, January 30, 1922.

The annual meeting of the Council of the State Medical Society of Wisconsin was held at the University Club, Milwaukee, Monday, January 30, 1922.

The following members were present: Doctors Wilkinson, Windesheim, Brown, Cunningham, Zierath, Evans, Connell, Redelings, Smith, Mitchell, Dodd, Dearholt, Hall and Sleyster.

The annual reports of the Secretary and the Treasurer were received and accepted.

It was unanimously decided to hold the 1922 meeting at Green Lake, Wisconsin, September 6, 7 and 8.

It was moved and carried that in the future the Treasurer furnish each member of the Council at the annual meeting with a typewritten report made out according to current year.

It was moved and carried that the President, the chairman of the Council and the Secretary request from the Attorney General a ruling as to the legality of appointing physicians to the State Board of Medical Examiners except from lists submitted by the Society.

Dr. George Ruhland of the Committee on Public Policy and Legislation appeared before the Council and was instructed by the Council to proceed during the year with the draft of a new Medical Practice Act and he was authorized to incur any necessary expense in connection with this.

The following officers were re-elected: Chairman, Dr. Edward Evans, La Crosse; Secretary, Dr. Rock Sleyster, Wauwatosa; Treasurer, Dr. S. S. Hall, Ripon.

ROCK SLEYSTER, *Secretary.*

AMERICAL MEDICAL ASSOCIATION.

ANNUAL SESSION, 1922,
ST. LOUIS, MISSOURI,
May 22, 23, 24, 25, 26.

St. Louis, January 8, 1922.

To the Editor:

For the convenience of many of your readers who will plan to attend the meeting of the American Medical Association, which is to be held in our city next May, will you kindly publish the following in your esteemed Journal:

"The St. Louis Meeting of the American Medical Association.

The May meeting of the American Medical Association at St. Louis promises well toward being the largest in attendance of any of the Association's sessions. Since the publication of the hotels in the Journal of the Association in December, inquiries and reser-

vations are being made daily. The hotels and the Conventions Bureau are aiding the Committee in a most satisfactory and helpful way to see that the Fellows are comfortably housed and accommodated. The A. M. A. meetings tax all cities entertaining them to the limit of hotel capacity. Whenever possible a good Fellow should double up so that no one is left without comfortable lodging.

Reservations should be made by communicating direct with the hotels. If satisfactory arrangements cannot be made in this way, write to Director Louis H. Behrens, Chairman Committee on Hotels, 3525 Pine Street, St. Louis, Mo."

Very truly yours,

THOMAS A. HOPKINS, M. D.,
Chairman Committee on Printing.

St. Louis' Leading Hotels (All European Plan), Their Location and Rates.

Hotel, with Number of Rooms	Street Address	Without Bath Single	Without Bath Double	With Bath Single	With Bath Double
American, 275	7th and Market Sts	.....	.....	$2.50-3.00	$4.00- 6.00
Diseases of Children					
American Annex, 225	6th and Market Sts	.....	.....	2.00-3.00	3.00- 6.00
Pathology and Physiology					
Pharmacology and Therapeutics					
Beers, 114	Grand and Olive Sts	$1.50	$2.50	2.00-2.50	3.00- 3.50
Brevort, 50	4th and Pine Sts	.....	.....	2.00	3.00
Cabanne, 43	5545 Cabanne St	.....	.....	12.00-37.50*	
Claridge, 350	18th and Locust Sts	.....	.....	2.50-4.00	4.00-10.00
Obstetrics, Gynecology and Abdominal Surgery					
Hamilton, 160	Hamilton and Maple Sts	.....	.....	2.00-2.50	3.50- 4.00
Jefferson, 400	12th and Locust Sts	2.50-3.00	4.00	3.00-8.00	6.00-10.00
Surgery, General and Abdominal					
Orthopedic Surgery					
Laclede Hotel, 265	6th and Chestnut Sts	1.50-2.00	2.50-3.00	2.50-3.00	3.50- 4.00
Majestic, 200	11th and Pine Sts	.....	.....	2.50-3.00	3.50- 4.00
Dermatology and Syphilology					
Nervous and Mental Diseases					
Marion Roe, 200	Broadway and Pine Sts	.....	.....	1.50-2.00	3.00- 4.00
Marquette, 400	18th and Washington Sts	2.00-2.50	3.00-3.50	3.00-3.50	4.00- 6.00
Laryngology, Otology and Rhinology					
Maryland, 240	9th and Pine Sts	2.00	3.00	2.00-3.50	3.00- 5.00
Gastro-Enterology and Proctology					
Urology					
Planters, 400	4th and Pine Sts	2.00-2.50	3.00-3.50	2.50-5.00	4.00- 8.00
Ophthalmology					
Plaza, 200	3300 Olive St	.....	.....	2.00-2.50	3.50- 5.00
Roselle, 100	4137 Lindell Blvd	.....	.....	1.50-2.50	2.50- 3.50
St. Francis, 120	6th and Chestnut Sts	1.50-2.00	2.50-3.00	3.00-4.00	4.00- 5.00
Statler, 650	9th and Washington Sts	.....	.....	3.00-7.00	5.50- 9.50
Practice of Medicine					
Stratford, 100	8th and Pine Sts	1.50	2.50	2.50	3.50
Terminal, 100	Union Station	1.50-2.00	3.00	3.00-3.50	5.00
Warwick, 200	15th and Locust Sts	.....	.....	2.00-4.00	4.00- 6.00
Stomatology					
Preventive Medicine and Public Health					
Westgate, 125	Kingshighway and Delmar Sts.	2.00	2.50	3.00	3.50

*Weekly rates only.

REPORT OF DELEGATE.

January 19, 1922.

Wisconsin State Medical Society,

Dr. Rock Sleyster, Secretary:

I beg to advise that in accordance with your notice of January 14th, I attended the meeting of the Advisory Council of the Wisconsin State Board of Health, which was held in Madison, January 18, 1922.

A copy of the plans for Promotion of Welfare and Hygiene of Maternity and Infancy as presented at this meeting is herewith attached.

Representatives were present from the departments and organizations named in this report. They presented individually and collectively outlines of their present activities and suggestions were made by them along constructive lines for furtherance of the above named work. The existing activities of the organizations were discussed from all the various angles in an endeavor to prevent an overlapping of work which the various organizations are doing at the present time.

A report from the State Board of Health apparently shows this organization to be partially prepared to meet the provisions which are designated by the Shepard-Towner bill and have already submitted a tentative budget.

The question was asked to what extent the Wisconsin State Medical Society would assist in furthering this work by securing or helping to secure competent medical assistance in the various centers. Methods and means of standard instruction to the physicians at the various centers will probably be needed. The question was raised by whom should this be undertaken. It was suggested that the plan as followed in Minnesota be investigated.

It was furthermore suggested that this matter be presented to the council of our society, with request that their co-operation could be secured in interesting the physicians of the state in the Maternal Welfare. Also any plan or advice regarding the methods of carrying out this work or any further suggestions would be gladly welcomed and should be submitted to the advisory council, W. D. Stovall, Chairman.

The spirit of co-operation that was evidenced by the delegates present was admirable and the outline as submitted by the State Board of Health, which is herewith attached, was accepted without criticism.

Respectfully submitted,

J. Gurney Taylor.

PLANS FOR THE PROMOTION OF THE WELFARE AND HYGIENE OF MATERNITY AND INFANCY.

Wisconsin State Board of Health.

Appropriations, State:

$31,100 beginning July 1, 1921. (Will not be exhausted by July 1, 1922.)

$21,100 beginning July 1, 1922.

Advisory Council:

Continue the Child Health Committee which has been in existence for two years. It is composed of representatives from the following departments and organizations:

State Department of Public Instruction.
State Medical Association.
State Board of Control.
Dept. of Agriculture, University of Wisconsin.
Home Economics, University Extension State Laboratory of Hygiene.
Wisconsin Anti-Tuberculosis Association.
State Graduate Nurses' Association.
State Conference of Social Workers.
American Red Cross, Central Division.
Federal Children's Bureau.
Woman's Christian Temperance Union.
Federation of Woman's Clubs.
United States Public Health Service.
State Laboratory of Hygiene.
National Organization for Public Health Nursing.
State Board of Health.
Bureau of Child Welfare.
League of Woman Voters.
Wisconsin University Medical School.
Wisconsin State Hospital.

General Activities.

Maternity Conferences:

Hold regular conferences at maternity and child health centers where physical examination will be made and instruction and supervision given to expectant mothers.

Establish at least one center in each county. (71)

Maternity Hospitals:

Promote the establishment of maternity hospitals and maternity wards in existing hospitals.

Child Health Conferences:

Hold conferences in the Child Welfare Special in about six centers in each of seven or eight counties during 1922, beginning April 1st. Hold conferences in health centers at stated intervals. Physical examinations will be made and advice given on general care and feeding.

Mothers' Helpers:

One of the greatest needs in our rural districts is for capable women to go in and assist with the household duties and give some care to mothers before and after confinement. We plan to hold short institutes for these people in connection with every maternity conference, hoping thus to stimulate more women to take up this type of work.

Little Mother's Classes:

A. Promote more forcibly the teaching of the ten lesson course on Infant Care, which is now being used in all vocational schools and many public schools.

B. A certificate to be issued by the State Board of Health to every girl who satisfactorily finishes the course.

Public Lectures, Illustrated:

By physicians and nurses.

Preparation of Personnel:

Arrange for graduate nurses and dietitians to take special training in infant feeding before taking up field work.

Work out some plan of co-operation with the College of Agriculture, Dept. of Home Economics, for follow-up nutrition work.

Personnel:

A. *Present Staff:*

Director.
One woman physician (for Child Welfare Special).
Two field advisory nurses.
One full time secretarial clerk.
One part time clerk.

B. *Proposed Additions:*

One full time woman physician (Obstetrician).
One nurse to assist on Child Welfare Special.
Several part time physicians (to hold conferences in health centers near own locations).
One driver for Child Welfare Special.
One field advisory nurse.
One full time clerk.
Several nurses and dietitians especially trained in infant feeding. (To do follow-up work after child health conferences.)

Equipment:

A. *Present:*

1 Child Welfare Special, cost $6,000.00 (under construction).
1 film "Our Children".
20 sets posters.
1 demonstration doll and layette.

B. *Additions proposed:*

Equipment for Child Welfare Special.
Films, and slides as needed.
1 Projecting Machine for films.
1 Attract-O-Scope.

Printed Material:

Such material as is necessary, including record and report forms. The policy of the Board of Health has been to reprint Children's Bureau publications when the monthly allotment does not suffice.

CHICAGO VENEREAL DISEASE INSTITUTE.

The U. S. Public Health Service announces a Venereal Disease Institute to be held under the direction of the Illinois State Department of Public Health at the Congress Hotel in Chicago, March 13-18, inclusive. Courses in syphilis, gonorrhea, the problem of prostitution and delinquency, clinics and their management, clinic social work and methods of health education will be given. Special features will include daily noon-day luncheons and evening clinics.

The Institute at Chicago, like twenty others that are being held at central points throughout the country, offers the attractive educational features that characterized the All-American Conference on veneral disease that was held in Washington, D. C., during November and December, 1920. This regional plan for holding these institutes was determined upon when the suggestion of a second conference at Washington stimulated nation-wide interest and it was apparent that hundreds of people who wished to attend would be obliged to make long journeys at considerable cost. The Chicago Institute offers even greater possibilities for this section of the country than would a national conference at Washington, since the same high standard of instruction will prevail and the relatively smaller number in attendance will make for a closer relationship between those in attendance and the instructors.

An invitation is extended to all physicians and especially those who are particularly interested in venereal diseases. Those who plan to attend are urged to register at once. Registration cards and programs may be obtained upon request from Dr. I. D. Rawlings, Director of Public Health, Springfield, Illinois.

ABDOMINAL MIGRAINE.

The report made by William A. Brams, Chicago (*Journal A. M. A.*, Jan. 7, 1922), is based on a consideration of twenty-two cases seen at the polyclinic of Dr. Paul Cohnheim of Berlin. This type of epigastralgia is distinguished by periodicity, often coming on with almost mathematical regularity. The intervals between attacks are symptomless. There is a history of migraine in either the patient or his family, and there are no evidences of organic diseases, such as tabes, gallstones, pancreatic disease or subdiaphragmatic angina pectoris, even after careful and prolonged observation over a number of years. Improvement was noted in many of the cases after antimigraine treatment when other measures were without result. The cases cannot be classified in any of the groups decribed as neuralgia of the celiac plexus, vagus or sympathetic systems as described by several authors. Abdominal migraine occurs chiefly in those who suffer from typical head migraine or when there is a history of this disease in the family. In view of the frequent presence of disturbances in the female pelvis, it is suggested that a course of ovarian extract be tried in these cases in addition to the regular arsenic and antimigraine measures.

NEWS ITEMS AND PERSONALS

At the annual meeting of the Deaconess Hospital staff, Milwaukee, Dr. G. H. Fellman was elected president, Dr. M. McRae, vice-president, and Dr. R. W. Blumenthal, secretary-treasurer.

Seventy-two members of the Sixth District Association of Graduate Nurses, comprising all the counties in the sixth Congressional district of the State, met at Neenah, January 11th, to attend the quarterly meeting of the association. A tour of inspection of the Theda Clark Memorial hospital was made under the guidance of nurses of that institution, followed by the business session held in the club rooms of the public library. Miss Grace Baird, superintendent of Bradley Memorial hospital, Madison, discussed the subject of state registration of nurses and what it meant to the graduate nurse. Miss Baird was followed by Miss Adelaide Northam, superintendent of the Milwaukee County training school, who spoke on the State League of Nursing Education and its relation to the graduate nurses' association. Miss Nellie VanKooy then addressed the meeting and spoke of the work that had been done through the nurses' organization in bringing about recent legislation favoring the nursing profession.

Dr. H. A. Smith of Antioch, Illinois, has been appointed assistant physician at the Wisconsin State Home for Feeble-Minded, Chippewa Falls, to fill the vacancy caused by the resignation of Dr. O. J. Upstodahl last September.

Mr. Theodore Esser, Milwaukee, who has been associated with the board of education for many years, has been appointed as a member of the board of trustees of the Marquette University Medical School.

Foundations are being built and excavating being done for the U. S. Hospital to be built on the gounds of the Soldiers' Home. The hospital, including equipment, will cost approximately $1,500,000, and will consist of a group of eight buildings. It is expected the structure will be completed by August first.

The Social Medical Club of Oshkosh held its fortnightly meeting at the Elks' Club, January 25th. An interesting discussion on some of the uses of the X-ray was presented by Dr. G. M. Steele.

The addition being built to St. Mary's Hospital, Wausau, will place the value of the institution at about $400,000. The new building is being rapidly eompleted and will soon be opened to the public.

Dr. S. A. J. Ennis has left Shullsburg and disposed of his practice there to Dr. H. Hoesley.

Scarlet fever quarantine has been extended from 21 days to 28 days by the State Board of Health.

Dr. Roger Cantwell has returned from Chicago and opened offices with his father, Dr. W. H. Cantwell at Shawano.

The schools of the city of Valders were recently closed as a result of a small pox epidemic in Manitowoc County.

Dr. Stanley J. Seeger has announced that he has established offices at 1038-1040 Wells Building, Milwaukee, for the practice of general surgery and surgical consultation.

Dr. Emil C. Schoene, Milwaukee, was sentenced to a four-year term in the State Prison on a charge of second degree manslaughter.

The Milwaukee city service commission has approved the permanent appointment of Dr. W. J. McKillip as medical superintendent of the bureau of venereal diseases in the health department. Dr. McKillip has held the position for the last two years under a provisional appointment.

Dedication services for the new hospital at Beaver Dam were held under the direction of the local Deaconess Association Sunday, January 29th. The hospital was opened to the public early this month.

Dr. L. Boorse was re-elected as head of the staff of the Misericordia Hospital, Milwaukee, at the annual meeting. Dr. J. A. Purtell was elected vice-president, and Dr. Robert W. Blumenthall as secretary and treasurer.

Census bureau figures credit Wisconsin with a slight increase in tuberculosis deaths for 1920. The year's tuberculosis mortality, 2,267, was 65 in excess of 1919. The rate was 85.6 per 100,000 population, as against 84.1 for 1919. On the other hand, this is a marked falling off from former years. Only four years before (1916), Wisconsin's tuberculosis death rate was 92.1: in 1917 it was 97.3, and in 1918 it was 94.4. For the death registration area of the United States in 1920, nearly 100,000 deaths were due to tuberculosis.

To increase facilities of the Marquette University Medical school, a three-story brick building at 4th and Harmon Sts. has been purchased by the university and is being remodeled for the departments of physiology and pharmacy. Special student and staff laboratories and the stock room will occupy the two upper stories, while a large students' laboratory will be on the first floor. Vacated floor space in the medical school building, 4th and Reservoir Sts., will be devoted to physiological chemistry, a library and a lecture room.

In Wisconsin, as in the country generally, cancer mortality is on the increase. In 22 states the rate in 1920 was higher than for any earlier year. Northern states have higher cancer death rates than southern. Wisconsin with 2,335 cancer deaths in 1920, exceeded 1919 by 50 deaths. The death rate was 88.2 per 100,000 population, as compared with 87.3 for 1919. For the registration area this rate was 83.4.

DEATHS

Dr. E. M. Jacobs died at his home in Manitowoc, Wednesday, January 11th, following a stroke of paralysis. Dr. Jacobs was born at Ephriam, Wisconsin, in 1858. He was engaged in business in South Dakota for a number of years and in 1890 entered Hahnemann Medical College, Chicago, from which he graduated in 1895. He located at Ephriam soon after and practiced there for three years, moving to Manitowoc in 1898, where he resided until the time of his death.

Dr. M. P. Cady, Birnamwood, died at Antigo, December 29th, of pneumonia. Dr. Cady was born in 1860 and taught school for a number of years at Birnamwood. He later entered the University of Illinois medical school from which he graduated in 1905 and then located in Birnamwood for the practice of his profession. He was a member of the Shawano County, Wisconsin State and American Medical Associations.

MARRIAGES

Dr. Albert R. Tormey, Madison, to Miss Beatrice Barnes, Milwaukee, January 18th, 1922.

PREVENTION OF DEVELOPMENT OF RICKETS IN RATS BY SUNLIGHT.

G. F. Powers and E. A. Park, New Haven, Conn.; P. G. Shipley, E. V. McCollum and Nina Simmonds, Baltimore (*Journal A. M. A.*, Jan. 21, 1922), assert that light cannot be left out of account in the study of any nutritional problem. Consideration of the light supply must in the future modify the dietary of prisoners, miners and all individuals who by occupation or other circumstances, are deprived of their optimal exposure to light. A certain amount of light must be considered essential to optimal health and development, just as are air, food, water and a proper relation between temperature and humidity. That is light rays are absorbed and utilized in carrying on the normal body functions. However, Nature has apparently furnished, in an organic substance contained in cod liver oil and elsewhere, a substitute for light, and the individual who is deprived of light can apparently adapt himself to the condition, provided this factor is contained in his diet in sufficient quantities. In this way, light differs from air. Although it is essential to optimal function under conditions normal for the species, it is not essential if certain factors contained in the fish oil are provided in sufficient abundance in the food. Either light or cod liver oil will prevent or cure rickets. Either permits the child or the rat to adapt itself to pathogenic variations of the calcium-phosphate ratio in the diet. And it is because of the existence of these two protective substances, apparently so widely different, that the confusion has grown up about the etiology of this disease. How the sunlight acts to product adaptation to unfavorable stimuli is not known. Two possibilities, however, suggest themselves. Light may mobilize a chemical factor in the body from tissues which contain it, perhaps the fat, thymus, spleen or lymph tissue. Such a process would be analogous to the mobilization of the leukocytes in the blood by radiation. The discharge of this factor may occur through or without accompanying destruction of the tissue reservoir by light. The second possibility is that cod liver oil and light supply the body cells with the same thing. We know that many oils emit light during the process of oxidation, and it may be that the oil actually radiates the tissues of the recipient. In this event, healing of rickets by cod liver oil would come about through the agency of a physical or physicochemical force rather than as a tissue reaction to a ponderable chemical substance. It is not impossible that vitamins may have to be sought among the organized chemical compounds.

REPORT OF FOUR RECENT CASES OF THORACOPLASTY.

A. G. Shortle and W. A. Gekler, Albuquerque, N. M. (*Journal A. M. A.*, Jan. 21, 1922), endorse the value of this operation, which is, however, to be considered only after the safer and simpler artificial pneumothorax has been found impossible to perform. Then the indications are practically those of that operation except for the following limitations: First, more care must be used in the choice of patients. The patient must be in better general condition physically than would be necessary in artificial pneumothorax, as the shock of operation is considerable. Second, cases must be selected with more regard to the heart and to the opposite lung than is the case in the simpler operation; for in artificial pneumothorax, the burden is thrown on those organs a little at a time, through a month or more, while in surgical collapse, the load is thrown on them at once. Therefore, a good heart and a fairly good uncollapsed or working lung is essential. Gas-oxygen is the only general anesthetic to be considered; but in many cases local anesthesia, as described by Saugman, is preferable. Since it is the internist who best appreciates the dangers of the operation and its effects, immediate and ultimate, he should be consulted, at least, at every step from the anesthetic to the after-treatment.

APPOINTMENT OF COMMITTEE ON GORGAS MEMORIAL.

Dr. Hubert Work, President of the American Medical Association, has appointed as the Committee on the Gorgas Memorial, Drs. George E. de Schweinitz, Philadelphia; Charles W. Richardson, Washington, D. C., and Fred B. Lund, Boston. This appointment was made in compliance with the request received by the Board of Trustees from the Gorgas Memorial Institute of Tropical and Preventive Medicine of Panama for the cooperation of the American Medical Association.

—*Jour. A. M. A.*, Jan. 7, 1922.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

Clinical Examination of the Nervous System. By G. H. Monrad-Krohn, Lectnrer in Neurology at the Royal Frederick University, Christiania. New York: Paul B. Hoeber, Publisher. 1922. Price, $2.00.

Ringworm, and Its Successful Treatment. By John P. Turner, M. D. Illustrated by 8 half-tone engravings. Philadelphia: F. A. Davis Co. 1921. Price, $1.00.

The Practical Medicine Series. (Comprising 8 volumes on the year's progress in medicine and surgery.) Vol. 1. Series 1921. **General Medicine.** Edited by Frank Billings, M. D., and Burrell O. Raulston, M. D. Chicago: The Year Book Publishers. Price, $2.50.

Motherhood. By H. W. Long, M. D. Bostou: Richard G. Badger, The Gorham Press. Price, $3.00.

Nostrums and Quackery By Arthur J. Cramp, M. D., Director of the Propaganda Dept., Journal of the A. M. A. Vol. 11. Chicago. 1921.

Transactions of the College of Physicians of Philadelphia. Third series. Vol. 42.

Diseases of Children. By Herman B. Scheffield, M. D. 238 illustrations. 9 colored plates. St. Louis: C. V. Mosby Co. Price, $9.00.

Ephraim McDowell—"Father of Ovariotomy" and Founder of Abdominal Surgery. With an Appendix on Jane Todd Crawford. By August Scnachner, M. D., Louisville, Ky. Octavo volume of 350 pp. Illustrated. Philadelphia and London: J. B. Lippincott Co. Price, $5.00.

Epidemiology and Public Health. In three volumes. By Victor C. Vaughan, M. D., LL. D. Vol. I—Respiratory Infections. 688 pp. St. Louis: C. V. Mosby Co. 1922. Price, $9.00.

Clinical Diagnosis. By Charles Phillips Emerson, A. B., M. D. 5th edition. 156 illustrations. Philadelphia & London: J. B. Lippincott Co..

Physical Diagnosis. By W. D. Rose, M. D. 2nd edition. 736 pp. 309 illustrations. St. Louis: C. V. Mosby Co. 1921. Price, $8.50.

Prostitution in the United States. Vol. I. Prior to the Entrance of the U. S. into the World War. By Henry B. Woolston, Ph. D. New York: The Century Co., and the Bureau of Social Hygiene. 1921. Price, $2.50.

Benign Stupors—A Study of a Pneumanic-Depressive Reaction Type. By August Hoch, M. D. 284 pp. New York: The MacMillan Co. 1921. Price, $2.50.

Bacteriology. By Estelle D. Buchanan, M. S., and Robert Earl Buchanan, Ph. D. Revised editiou. New York: The MacMillan Co. 1921.

The Unconscious. By Morton Prince, M. D., LL. D. Second edition, revised. New York: The MacMillan Co. 1921.

Social Aspects of the Treatment of the Insane. By John A. Goldberg, Ph. D., Columbia University, New York. New York: Longmans, Green & Co. 1921. Price, $2.50.

Pitfalls. By A. J. Caffrey, M. D., Milwaukee. Boston: Richard G. Badger: The Gorham Press. 1921. Price, $2.00.

Suggestion and Auto-Suggestion. By Charles Boudouin, Professor at the Jean-Jacques Rousseau Institute. New York: Dodd, Mead & Co. 1921.

Vice and Health. By John Clarence Funk, M. A., LL. B. 174 pp. Philadelphia and London: J. B. Lippincott Co. 1921. Price, $1.50.

Essentials of Laboratory Diagnosis. Designed for students and practitioners. By Francis Ashley Faught, M. D., formerly Director of the Laboratory of the Department of Clinical Medicine and Assistant to the Professor of Clinical Medicine, Medico-Chirurgical College, etc., Philadelphia, Pa. Eleven full-page plates (four in colors) and seveuty-eight text engravings. Seventh Revised and Enlarged Edition. F. A. Davis Company, Publishers, Philadelphia, Pa. 1921. Price, $4.50.

1920 Collected Papers of the Mayo Clinic, Rochester, Minn. Octavo of 1392 pages, 446 illustrations. Philadelphia, and London: W. B. Saunders Company. Cloth, $12.00, net.

Diseases of the Skin. By Henry W. Stelwagon, M. D. Ninth Edition revised with the assistance of Henry K. Gaskell, M. D., attending Dermatologist to the Philadelphia General Hospital. 1313 pages, 401 text illustrations and half-tone plates. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $10,00, net.

History of Medicine, with Medical Chronology, Suggestions for Study and Bibliographic Data. By Fieldiug H. Garrison, M. D., Lt.-Colonel, Medical Corps, U. S. Army, Surgeon General's Office, Washington, D. C. Third Edition, Revised and Enlarged. Octavo of 942 pages. 257 portraits. W. B. Saunders Company, Philadelphia and London, 1921. Cloth, $9.00, net.

The Spleen and Some of Its Diseases. By Sir Berkeley Moynihan, Leeds, Englaud. 129 pages, 13 full page diagrams, Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $5.00, net.

Surgical Anatomy. By William Francis Campbell, M. D., Surgeon-in-Chief at Trinity Hospital, Brooklyn, N. Y.; Sometime Professor of Anatomy and Professor of Surgery, Island College Hospital. Third Edition, Revised. 681 pages, 325 original illustrations. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $6.00, net.

Bacteriology — General, Pathological and Intestinal. By Arthur Isaac Kendall, B. S., Ph. D., Professor of Bacteriology, Northwestern University Medical School, Chicago. 2nd edition. 700 pp., 99 engravings, 8 color plates. Philadelphia and New York: Lea & Febiger. 1921. Price, $6.00.

Diseases of the Digestive Organs with Special Reference to Their Diagnosis and Treatment. By Charles D. Aaron, Sc. D., M. D., F. A. C. P. Professor of Gastroenterology and Dietetics, Detroit College of Medicine and Surgery. 3d edition, revised. Philadelphia and New York: Lea & Febiger. 1921. Price, $10.00.

Insanity and Mental Deficiency in Relation to Legal Responsibility.—A Study in Psychological Jurisprudence. By Wm. G. H. Cook, LL. D. (London). New York: E. P. Dutton Co. 1921. Price, $4.00.

Diseases of the Skin. By Richard L. Sutton, M. D., Professor of Diseases of the Skin, University of Kansas School of Medicine, Dermatologist to the Christian Church Hospital. 969 illustrations, 11 colored plates. Fourth edition, revised and enlarged. St. Louis: C. V. Mosby Co. Price, $9.50.

The Glands Regulating Personality, A Study of the Glands and Internal Secretions in Relation to the Types of Human Nature. By Louis Berman, M. D., The MacMillan Co., New York. 1921.

BOOK REVIEWS

Bacteriology. By Estelle D. Buchanan, M. S., and Robert Earl Buchanan, Ph. D. Revised edition. The MacMillan Co., New York. 1921.

This work is a revision of the lectures given to students in Home Economics at the Iowa State College of Agriculture and Mechanical Arts. It is a study of the subject matter of bacteriology in its relationships to domestic science and should prove helpful to those teaching this work. The volume has been divided into five sections, the first on morphology and classification; the second on observation of micro-organisms; the third on physiology; the fourth on fermentation, and the fifth on the relationship of micro-organisms to health.

In the present edition, several chapters of the first have been completely rewritten and other chapters on physiology extensively revised. The chapters devoted to specific bases of food preparation have been elaborated upon and the scope of the work has been increased to meet the need of students in non-technical courses, namely those enrolled in general science and liberal arts as well as those interested primarily in household science. The work is not intended as a physician's textbook but will prove interesting and valuable to the medical reader.

The Medical Clinics of North America. Volume V, Number II. (The Mayo Number, September, 1921.) Octavo of 317 pages, 80 illustrations. W. B. Saunders Company, Philadelphia and London, 1921. Published Bi-Monthly. Price per Clinic year: Paper, $12.00. Cloth, $16.00.

The Medical Clinics of North America. Volume V, Number III. (The Philadelphia Number, November, 1921.) Octavo of 362 pages, 44 illustrations. W. B. Saunders Company, Philadelphia and London, 1921. Published Bi-Monthly. Price per Clinic year: Paper, $12.00. Cloth, $16.00.

The Surgical Clinics of North America (Issued serially, one number every month). Volume I, Number 5 (The Mayo Clinic Number). 296 pages, with 163 illustrations. Per clinic year (February, 1921, to December, 1921). Paper, $12.00, net; Cloth, $16.00, net. W. B. Saunders Company, Philadelphia and London.

Clinical Examination of the Nervous System. By G. H. Monrad-Krohn, Lecturer in Neurology at the Royal Frederick University, Christiania. Paul B. Hoeber, Publisher, New York. 1922. Price, $2.00.

This little work of 135 pages gives a routine method of making examinations of the nervous system which will be of much value to the student, house-physician or general practitioner. In it, Dr. Monrad-Krohn describes a routine method which he has adopted in his neurological clinic and has given an outline of the clinical tests which he considers to be the most practical and useful. It is an excellent little work on the subject and will prove very helpful to those for whom it is written.

Ringworm, and Its Successful Treatment. By John P. Turner, M. D. Illustrated by 8 half-tone engravings. F. A. Davis Co., Philadelphia. 1921. Price, $1.00.

In 1913, about eighty cases of ringworm were discovered in the Philadelphia public schools. Dr. Turner was requested to take up the treatment of these cases and was so successful that on the request of the director of medical inspection, he has presented this little work on the subject. In all, he has treated some thousands of cases and had unusual experience. The work covers the history of ringworm, pathology, diagnosis and treatment and will prove a welcome guest in the library of those who have to do especially with school children.

The Practical Medicine Series. (Comprising eight volumes on the year's progress in medicine and surgery.) Vol. I. Series 1921. *General Medicine.* Edited by Frank Billings, M. D., and Burrell O. Raulston, M. D. The Year Book Publishers, Chicago. Price, $2.50.

Volume I of this popular series is a rather pretentious work of 630 pages and is a splendid review of the best literature of the year. It measures up in every respect to previous volumes which have proved so popular and covers practically everything in the field of general medicine.

Motherhood. By H. W. Long, M. D. Richard G. Badger: The Gorham Press, Boston. Price, $3.00.

Dr. Long's works always make a strong appeal to those interested in sensible works dealing with the sex problem and this little work dedicated to mothers, and to mothers and fathers yet to be, measures up in every respect to the high standards Dr. Long has set in previous publications.

It covers sensibly and sanely the subject of mother-

hood, preparation for motherhood and the hygiene of pregnancy and is a work which should be in the library of every practitioner, ready to loan or recommend to those who need instruction on the subject.

Nostrums and Quackery. By Arthur J. Cramp, M. D., Director of the Propaganda Department, Journal of the American Medical Association. Vol. II. Press of the A. M. A., Chicago, Ill. 1921.

The first volume of "Nostrums and Quackery" was published in the latter months of 1911. It was quickly exhausted and other editions have been printed since. The Journal of the A. M. A. has continued publishing, week by week, articles on the nostrum evil, quackery and allied matters affecting the public health and these have been collected and placed in form for Vol. II. The present volume contains little of the material published in Volume I for it would have required a cumbersome work of some 1500 pages to do so, but the index of Volume II is a double one containing references to both volumes.

The general practitioner as well as the specialist is almost daily asked for information regarding the advertising of various medical quackery. This work will furnish reliable information on the subject and will prove a very handy reference.

Transactions of the College of Physicians of Philadelphia. Third series. Vol. 42.

The *Journal* is always pleased to acknowledge the transactions of the Philadelphia College of Physicians. It contains the papers read before this organization during the year and is a volume of some of the very best current medical literature.

Diseases of Children. By Herman B. Scheffield, M. D. 238 illustrations. 9 colored plates. C. V. Mosby Company, St. Louis. Price, $9.00.

At the end of thirty years' experience in his specialty, Dr. Scheffield has presented an excellent textbook designed especially to meet the needs of the general practitioner and the medical student. The work is divided into such sections as prevention and control of disease, examination, congenital malformation, injuries and diseases of the new-born, diseases of the alimentary tract, of the respiratory system, circulatory system, of the blood and ductless glands, of the kidneys, of the nervous system, of the skin, of metabolism and specific communicable diseases.

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Ephraim McDowell. "Father of Ovariotomy" and founder of Abdominal Surgery, with an appendix on Jane Todd Crawford by August Schachner, M. D., F. A. C. S., Louisville, Kentucky. Octavo volume of about 250 pages. Attractively printed and profusely illustrated with plates in double tone. J. B. Lippincott Company, Publishers, Philadelphia and London. Price, $5.00.

Ephraim McDowell in his crude and wild but picturesque setting, amid the daring and the coarseness of the frontier, as a country doctor practicing his profession without a diploma, singly and alone, through his ovariotomy added more to the art of surgery during the short space of his career than all of the rest of the surgical world combined added in the same number of years and during the same period. The story of McDowell's life is a story of the greatest neglect to which one of the foremost heroes of medicine and benefactors of humanity has ever been exposed. The motif of the book is to call attention to this neglect and to arouse an interest in this pioneer master of abdominal surgery.

The struggle which attended the adoption of ovariotomy and which lasted for fully a half a century is vividly set forth, and the persecutions to which the earlier defenders were subjected is of the keenest interest. It was not until 1861, or more than a half century after McDowell's first ovariotomy before a favorable word was said for it by a French professor in a French university. In England the situation was very little better as it was not until a third of a century thereafter that a London hospital could boast of a successful ovariotomy.

A fascinating review of the more important events of that interesting period and place in which he practiced is interwoven throughout the narrative. It is a review of the times and contains thumb nail sketches of persons who directly or indirectly became associated with the man and his work during his own period and the period that followed. The importance of the frontier in medicine and in the development of our national characteristics are strikingly portrayed.

The book contains the first real attempt to present a history of the heroine whose co-operation made the premier ovariotomy a possibility. This feature involved a patient and an unusual investigation that ended in the discovery of her grave in an obscure cemetery almost a century after her death. It contains an elaborate bibliography and a carefully prepared index that makes it valuable as a work of reference upon McDowell and his time but also upon ovariotomy and the earliest efforts in abdominal surgery. It should find a place in every reference library technical or otherwise, and no surgical library is complete without this long delayed effort upon so important and such a fundamental subject.

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THE REFERENDUM ON ALCOHOL.

In hearings before Congress, in the discussion of regulations issued by the Internal Revenue Department, in fact, in practically every discussion of prohibition, contradictory statements have been made as to the views of physicians on the value of alcoholic beverages as therapeutic agents. Several scientific organizations have adopted resolutions on the subject. So far as we know, however, no attempt has heretofore been made to ascertain, in a direct way, the opinions of any considerable number of physicians.

Moreover, the medical profession has been subjected to ridicule and criticism on account of the actions of a small number of its members who are abusing their privileges and who have assumed a position in the public eyes not credible to the profession as a whole. It therefore seemed worth while to obtain the views of a large number of physicians regarding the effect on medical practice of the present regulations; to discover whether or not conditions might be improved, and if so, how.

In order to secure the views of a representative portion of the medical profession a questionnaire was sent to more than one-third—53,900—of the physicians of the United States. Of these, 43,900 were selected by arbitrarily taking every other name on the mailing list of the Journal A. M. A. In towns in which there was only one physician, the questionnaire was sent to that physician. In addition, the questionnaire was sent to 10,000 physicians who were neither members of the organization nor subscribers of the Journal A. M. A. These names were selected in a similar manner, but from the medical directory.

The excellent response, reaching 58 per cent of replies and representing 21.5 per cent of the physicians of the country, a percentage of return seldom attained by the questionnaire method, has been gratifying as an indication of the interest taken by our profession in this attempt to secure an adequate expression of its views.

As might have been expected the Journal A. M. A. has been accused by many of preparing these questions wholly in the interest of prohibition, and an equal number have asserted just as emphatically that the questions were intended as the opening wedge for breaking down prohibition.

Some have taken exception to the word "necessary", claiming that no drugs are absolutely necessary, and that "desirable" or "advisable" would have been a better word for the purpose. This point was given careful consideration in formulating the question. Moreover, the word "necessary" is used in the National Prohibition Act itself (Section 7, Title II):

> . . . And no physician shall prescribe liquor unless after careful physical examination of the person for whose use such prescription is sought, or if such examination is found impracticable, then upon the best information obtainable, he in good faith believes that the use of such liquor as a medicine by such person is *necessary* [italics ours] and will afford relief to him for some known ailment.

The word "advisable" or "desirable" would have been as much too mild as "necessary" is, perhaps, too strong; "necessary" does not mean indispensable, and it was properly regarded by practically all who answer the questionnaire.

The criticism has been made that the question as to whether whiskey is a necessary therapeutic agent is a scientific one and cannot be decided by resolutions or by votes. This is true; and the referendum was to secure the *opinions* of physicians on the subject, not to decide a scientific question. It is granted that the physiologic effects of alcohol are matters which may be determined in the laboratory; but therapeutics is the application of such findings to the treatment of disease as determined by the opinions of physicians. This and the experience of physicians—for the opinions necessarily are based on experience and observation—may be determined, as has been done, by the questionnaire.

Approximately one-third of those replying commented on the general prohibition situation, on the restrictions and regulations, or on some allied topics. The more interesting of these comments have been published in connection with reports on the individual states. Many of the views brought out in the comments are of value to those who are interested in the subject from the sociological or from any other point of view. For instance: Since national prohibition went into effect, judging by these comments there has apparently been a reaction against prohibition in many states in which prohibition by state law had become accepted and effective. This is especially noticeable in the comments from Colorado, Kansas, Nebraska, South Dakota, and even from Maine. From the comments, one must come to the conclusion that home-made, illegally distilled or chemically compounded liquors—so-called "moonshine"—are being extensively used in states in which this was not the case three or four years ago. What has produced this apparent change?

The questionnaire has brought out definitely the fact that the present regulations governing the medicinal use of alcoholic beverages are not satisfactory—in fact, many physicians declared them "intolerable." Many who were convinced that these drugs were not necessary therapeutically were emphatic in stating that other physicians who believed them necessary were entitled to have their views respected, and were warranted in efforts to have the drugs made available without incurring the odium attaching under the present regulations.

Evidently most physicians are satisfied with the control of narcotics as regulated under the Harrison Narcotic Law, and many expressed a desire that the control of alcoholic liquors follow such lines. A decidedly large number of physicians suggest that the government take over the whiskey, including its storage and sale, and supply it in sealed packages—say of 8, 16 and 32 ounces—for medicinal use only, and at a fixed price, under regulations similar to those of the Harrison Narcotic Law, thus making available to physicians a drug of dependable quality.—*Jour. A. M. A.*, Jan. 21, 1922.

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ORIGINAL ARTICLES.

TYPES OF SEVERE ANEMIA.*

WITH ESPECIAL REFERENCE TO SECONDARY HYPOPLASTIC ANEMIA.

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The anemias in recent years have been generally classed under some such scheme as the following:

1. Post-Hemorrhagic—acute and chronic.
2. Secondary or Symptomatic.
3. Anemia due to disturbance of hemogenesis:
   (a) Chlorosis.
   (b) Aplastic anemia—primary and secondary.
   (c) Myelophthisic anemia (including anemia associated with leukemia).
4. Anemias due to hemolysis:
   (a) Toxic Group.
   (b) Symptomatic Hemolytic Anemia.
   (c) Ictera-Anemia.
   (d) Pernicious Anemia.

1. *Hemorrhagic anemia* presents clear cut pictures when it is acute in its development and also in more chronic cases when considerable losses of blood have occasioned rather marked anemia from the beginning. In cases in which small losses of blood have occurred over a long period of time there is often a picture that is not so clear and it is probable that such cases may at no stage present the marked features of the acute or of the more rapidly developed chronic group. These very slowly developed chronic hemorrhagic anemias from small blood losses are relatively uncommon and will not be further considered at this point. Ordinary post-hemorrhagic anemias are clearly indicated by the more or less pronounced reduction in red cells and the relatively greater reduction in hemoglobin. There is little change except some pallor in the appearance of the red cells, but nucleated red cells (norma-blasts) are frequently found and may be abundant. Leucocytosis is usually present and the polymorphonuclear neutrophiles predominate. Repeated large hemorrhages extending over a considerable period of time occasion a form of anemia not dissimilar from that just outlined except that there is a greater reduction in the number of red cells and considerable alteration in their morphology is frequently observed. Variation in the size and shape of the cells is more striking than polychromasis. Erythroblasts are less abundant than in the acute cases and leucocytosis is less marked, except perhaps immediately following one of the recurring hemorrhages.

The hematologic features of post hemorrhagic anemia are clearly attributable to the direct loss of blood and the dilution of the blood mass with tissue fluids and to the subsequent increased hemogenesis stimulated by the loss.

2. *Secondary or Symptomatic* Anemia occurs after a great variety of diseases including infections, parasitic diseases, malignant tumors and intoxications. The hematologic features in the acute and chronic cases vary somewhat as do these in acute and chronic post hemorrhagic anemias, and there are minor variations in the case of anemias due to different infections, parasites or intoxications. In general, however, we find in the more acute cases a chloro-anemic picture similar to that seen in acute anemia after hemorrhage, but with, as a rule, less tendency to the appearance of nucleated red cells, while leucocytosis is often distinctly more marked. Changes in the morphology of the red cells are slight even when the anemia is quite severe. Exceptions to these statements occur in some cases, for example, in the pronounced anemia of some cases of lead poisoning or other toxemias. In the more chronic symptomatic anemias greater reduction in the number of erythrocytes and relatively less marked reduction of hemoglobin with less leucocytosis are usual while the morphology of the red cells may show pro-

*Read before the Tri-State District Medical Association, November 14, 1921, at Milwaukee, Wisconsin.

nounced alterations. The high grades of anemia occasionally met with as a result of long continued small hemorrhages closely resemble the more chronic and severe secondary anemias. Considerable variations in size of the red cells and occasional or even abundant macrocytes, marked poikilocytosis and decided polychromasia are found in the severe and more prolonged cases. Erythroblasts are not numerous but an occasional normablast or megaloblast may be found. The number of leucocytes is distinctly lower than in acute cases. With continuance and, perhaps, increased severity of such cases there is sometimes a further fall in the number of red cells, occasionally to below 1,000,000 while the hemoglobin may remain nearly stationary or decrease more slowly so that in the end a color index of 1 or 1+ instead of a lowered index is reached. The leucocytes in the meantime may likewise diminish in number to normal or below normal, the neutrophilic polymorphonuclears becoming less abundant, while the lymphocytes are in relative excess. There is a manifest and pronounced difference in the blood picture of such extreme cases as contrasted with ordinary or even somewhat prolonged symptomatic anemias which suggests an added pathogenetic factor.

The development of secondary or symptomatic anemia may with probable correctness be attributed in part to blood destruction and in part to diminished hemogenesis. That there is a large element of hemolysis in the anemia of various infections especially malaria, pneumococcus and streptococcus infection and in certain toxemias such as lead poisoning or arsenic poisoning seems fairly clear despite the fact that our methods of determination do not clearly show the features which we are accustomed to think of as evidences of hemolytic anemia. There are, however, reasons for suspecting that failure of hemogensis is also a factor in the development of the anemia in these cases. So far as the latter factor may be indicated by evidences in the blood of failure of bone marrow activity (reduction of platelets, reduction of skein cells and diminution of polymorphonuclear neutrophiles) we have little that is positive. On the other hand there is a marked disproportion between the degree of anemia attained in many cases and any evidence whatever of hemolysis.

The interpretation of the cases of very severe and it may be very prolonged secondary anemia, in which extreme reductions in the number of red cells, high or normal color index, normal leucocyte count or actual leucopenia and more or less morphologic variation of the erythrocytes are the outstanding features, is uncertain, but as it is particularly this class of cases to which I desire to direct attention, let me reserve the fuller discussion until I have completed in brief outline the description of the other groups of anemic disease.

3. *Anemias due to disturbance of hemogenesis* (a) Chlorosis, a disease which has been little discussed in recent years, seems clearly dependent upon some defect in blood making. Whether some original structural fault in the mesoblastic (erythropoietic) tissues or an organic or functional disturbance in the sex glands is the fundamental cause remains undetermined. In connection with the possibility of an endocrine basis, one may recall the occasional occurrence of severe anemia in cases of myxodema. One such recent case in my own experience had suggestive resemblances to pernicious anemia and terminated in complete paraplegia due to spinal sclerosis.

The blood picture in chlorosis as originally defined by Duncan consists of marked reduction in the hemoglobin without reduction in the number of the red cells, and later studies emphasized the absence of morphologic changes in the red cells or alterations in the number or kind of leucocytes. While this is the picture of freshly developed cases, considerable alteration takes place in untreated or inadequately treated cases that have become chronic. In these one finds decided diminution in the number of red cells and consequently less pronounced disproportion in the percentage of hemoglobin and corpuscles. It is clearly inclusion of cases of this advanced type that has somewhat changed the picture of the disease as described by some authors of later date than Duncan (See Van Noorden's article "Chlorosis" Nothnagel's Cyclopedia, American Edition). That this change occurs in prolonged and uncured chlorosis was noted by various earlier writers and has been clearly shown in a number of my own cases where the earlier (Duncan) picture was followed by the later features. In this late stage the disease is hematologically indistinguishable from many cases of undoubted secondary anemia. To those cases of secondary anemia in which the poverty of hemoglobin is especially marked, it has become customary to give the title Chloro-anemia, while in an

adjective sense the term Chloro-anemia is used for any anemia even tending in this direction. The recognition that secondary anemia may present this type of chloro-anemia and that the underlying cause of a symptomatic anemia may be obscure has led most of us in recent years to classify as secondary anemia cases which may well have been chlorosis and it is notable that hospital statistics contain less and less reference to this disease. Chlorosis, however, is a definitely established condition and should no doubt be more in our thoughts than it has been of late. That it may grow into a form that more strongly suggests secondary anemia than the picture which is usually described and may finally, in exceptional cases resemble pernicious anemia is quite certain. Some of my case reports of refractory types followed through a series of years indicate this very clearly.

(b) Aplastic anemia may be a primary condition of obscure etiology or may be secondary to definite causes. The former is a disease now quite well recognized in which rapidly increasing anemia occurs without any clear indications of hemolysis but with evident failure of blood making function as is shown by the usual absence of nucleated red cells, and the great reduction in the number of skein cells and platelets, of the total number of leucocytes and of the polymorphonuclear elements in particular. A marked hemorrhagic tendency is found to correspond with the diminished number of platelets.

A secondary form of aplastic anemia results from certain forms of intoxication, very strikingly from benzol poisoning as was shown in the report of one of my cases in a workman exposed to a "spill" in an aniline dye works. Less conspicuous cases are no doubt fairly common and are likely to increase in frequency with the more extended use of benzol and its derivatives or related poisons in various industries. In this connection I wish to state that a somewhat striking occurrence of cases of severe anemia among chauffeurs and men working about garages has impressed me of late.

The hematological features of these toxic cases may closely resemble those of primary aplastic anemia though there are as a rule greater alterations in the morphology of the red cells suggesting some associated hemolysis.

(c) *Myelopthisic and post-leukemic anemia and that following exposure to radiation.* The distruction of the marrow by metastatic tumors or leukemic infiltration is known to produce a type of anemia, sometimes intense and with evidences in the earlier stages of marrow excitation and later of hypoplasia or aplasia of the marrow. Similar results (without the earlier excitation) occur in cases of prolonged radiation, particularly, I believe where the treatments have been directed over the marrow of these conditions there is essentially a direct destruction of marrow with resulting loss of hemopoietic function. The anemia that results may be extreme but does not present features suggestive of a hemolytic factor in the etiology.

4. *Anemia due to hemolysis* (a) Toxic group. Marked hemolytic anemia may be caused by various forms of poisoning such as T. N. T., Di-nitro benzol, Chlorate of potash, acetanilid or the venoms of certain animals. Certain infectious anemias occasionally fall in this group. Such cases are distinguished from ordinary secondary infectious anemias, in which the probability of a hemolytic factor is admitted though not evident, by the excessive degree of hemolysis and its conspicuousness in the clinical picture.

Rapidly increasing destruction of red cells with pronounced morphologic changes in the circulating erythrocytes and the development of jaundice, enlargement of the spleen and increased output of urobilin or other blood pigments are conspicuous in this group. It is unnecessary to discuss more fully the features observed.

(b) Symptomatic hemolytic anemia may occur in occasional cases of pregnancy, lues, or carcinoma but are too unusual to warrant further discussion.

(c) *Hemolytic Ictero-Anema—Congenital, or acquired* and of varying grades of severity constitutes a group in which the associated splenic enlargement and jaundice with the increasing anemia and, as a rule, increased fragility of the red cells are conspicuous features. In the earlier stages and especially in the congenital form comparatively moderate changes in the erythrocytes may contrast with the other clinical features. The red cell count may also be little altered from the normal or, at least, may not be reduced below that of moderate anemia, but as the disease advances, marked changes in the morphology of the erythrocytes and profound anemia may develop and at times hemorrhagic phenomena complicate the picture and increase the impoverishment of the blood. In several cases in our series the disease terminated as a grave

purpuric condition. The blood picture in advanced stages gives evidence of the hemolytic nature of the disease, marked changes in the red cells, fragmented cells, polychromasia and pigmented cells, while throughout the disease and before any changes in morphology are discovered excessive urobilin excretion signifies the augmented blood destruction.

(d) *Pernicious Anemia.* All modern writers regard this severe and eventually fatal disease as essentially a hemolytic anemia and give little or no consideration to the older view that faulty hemopoiesis may be a contributing factor. Some designate the disease simply as cryptogenic hemolytic anemia and nearly all agree that the blood destroying agent whether infectious or toxic is of unknown source. I shall not delay even to mention the various views held regarding possible origins. The recognition of the disease when pronounced and typical offers no serious difficulties. The extreme reduction in the number of the erythrocytes, their marked alteration in size and shape, the presence of more or less abundant bizarre forms, the occurrence of decided polychromasia of pigmented (granular) red cells and of erythroblasts especially megaloblasts, and the presence of a large number of erythrocytes of excessive size, (megalocytes) gives the blood picture of typical cases a pathognomonic character. Furthermore, the appearance of the patient (yellow or icteric color), the increased excretion of urobilin in the urine and the excess of total urobilin in the feces and urine are significant features. Unfortunately, there are cases of quite advanced stage in which the character of the blood and the clinical conditions are atypical and on the other hand, pronounced hemolytic anemias of other kinds and sometimes secondary anemias may closely resemble pernicious anemia in their hematologic manifestations. Additional confusion is caused by the the fact that in its earlier stages and during remissions, the blood picture may be very slightly suggestive of the disease. The recognition of the disease is, therefore far less simple than is sometimes believed and errors of omission as well as of commission are not infrequent. That we may make as few as possible of the former type of errors it is necessary to review the data already mentioned as well as some additional clinical features to determine, if possible, the limitations of the term pernicious anemia.

Fatal Termination not diagnostic. 1. In early descriptions of the disease emphasis was placed upon its fatal termination and it is clearly evident in the literature that the tendency to a fatal termination is one of the factors in diagnosis that has been given great weight. In practical clinical experience, I believe few of us have failed seeing cases which have been regarded as pernicious anemia because they were instances of severe anemia without any discovered cause and unrelieved by treatment and despite the fact that the clinical and hematologic features as a whole did not warrant such a diagnosis. That this is a common error of those not especially familiar with blood diseases, my experience compels me to believe. Though we may find ourselves unable to differentiate the type of profound anemia, we should recognize that the evident lethal tendency of the case does not justify the diagnosis of pernicious anemia. It must, of course, be conceded that when the hematologic features suggest the diagnosis inefficacy of all forms of treatment and a fatal ending warrant a positive decision.

(2) *Morphologic changes in the red cells.* The combination of all of the recognized abnormalities in the blood picture undoubtedly establishes the diagnosis almost positively, but cases otherwise typical may be wanting in one or more features. Marked alteration in the character of the red cells may be absent in early stages and may disappear during remissions, and exceptionally may be long delayed in their appearance in cases otherwise quite definite. I recall one in which during a year of increasing anemia never typical in the count and color index, there was a complete absence of morphologic change in the red cells and no erythroblasts were found, yet spinal degeneration occurred and finally caused complete paraplegia, the tongue was characteristic and before death the blood picture was nearly typical. Except in early stages and in remissions such absence of morphologic changes is rare and a diagnosis in their absence is difficult, indeed.

Erythroblasts. Great weight is given to the significance of nucleated cells and it has sometimes been suggested that the absence of such cells or even of the form termed megaloblasts should exclude the diagnosis. A number of years ago a hematologist took me to task for venturing a diagnosis of pernicious anemia in a case in which there

were only normablasts. Such a criticism would hardly be made today and it is generally admitted that blasts of all sorts may be wanting, though usually in these cases repeated examinations will sooner or later reveal their occasional presence. Megaloblasts when present, and this is doubtless the case in the majority of instances, are especially significant, but they are not diagnostic as we well know they may occur in occasional severe anemias of other sorts.

Megalocytosis. Not the presence of an occasional large form but a definite increase in many; perhaps an average increase in size is highly significant and rarely met with except in this disease. Its absence does not exclude the diagnosis when other conditions strongly indicate it.

The other morphologic conditions taken separately—anisocytosis, poikilocytosis, polychromasis and granular pigmentation—must not be given undue weight but are features that are usual and important in the whole picture and taken together are significant though not diagnostic.

3. *Evidences of hemolysis.* We rely upon the yellowish color of the patient or the blood plasma, fragmentation and other marked changes in the red cells, urobilinuria and increase of total urobilin in feces and urine, and enlargement of the spleen (which is somewhat proportional to the degree of hemolysis) as the best evidences of blood destruction. Estimations of the urobilin in the feces and urine or in the duodenal fluid would appear to be the most exact method and are undoubtedly in quantitative determinations the most useful; but we meet with occasional cases of undoubted pernicious anemia in which these methods fail. Several have occurred in my own recent experience. It may not be assumed from this that pernicious anemia is not necessarily a hemolytic anemia nor even that hemolysis was temporarily absent in these cases. In each of the instances referred to other features left little doubt of the presence of a hemolytic process. Similarly there are cases showing none of the usual yellow discoloration while urobilin tests are positive. The evidence, as a whole, rather than a single criterion must be relied on, and it must also be remembered that a certain yellowness of the skin may be found in nonhemolytic secondary anemias just as it occurs in certain individuals who have suddenly grown faint or in a person suffering from acute nausea.

A diminution of platelets, less marked than in aplastic anemia, a leucocyte count nearly normal or below normal but less decided leukopenia and relative lymphocytosis than in aplastic anemia are other factors in diagnosis.

Diminished fragility of the red corpuscles is commonly present in pernicious anemia and has a certain slight value in distinguishing this condition from severe secondary anemias. It is, of course, in sharp contrast with the increased fragility of ictero-anemia.

Some increase in the percentage of skein cells is usual in the earlier stages and generally throughout the whole disease. In late stages a flagging of hemogenesis may be accompanied by a diminution of these cells.

Among the clinical symptoms that deserve some special consideration are the condition of the tongue, the analysis of the gastric contents and nervous manifestations.

A peculiar redness of the tongue sometimes of a raw, at other times of a shining character, with or without thickening (glossitis) and painful sensations in the mouth and especially in the tongue are frequent early manifestations of pernicious anemia. When combined with an evident, increasing impoverishment of the blood these symptoms are highly suggestive, especially in patients past middle life, but they are by no means necessarily forerunners of pernicious anemia nor are they adequate to determine that a given anemia, not otherwise suspicious, is pernicious anemia.

In cases of oral sepsis with severe secondary anemia in particular one sometimes sees precisely the same conditions of the tongue as in pernicious anemia.

Absence of free hydrochloric acid with or without the absence of ferments occurs so frequently that it has a considerable value in diagnosis, particularly as there is far less commonly such an acidity in cases of even the most profound secondary anemias when these are independent of gastric disease.

Much has been said in recent years of the diagnostic significance of nervous symptoms and in particular of spinal cord disease (postero-lateral column disease). While it is quite true that an early development of numbness and of tingling pains in the extremities, particularly in the feet, is highly suggestive. and that in the more devel-

oped stages of the anemia loss of the sense or position of the toes or foot(acroataxia) and of vibratory sensation (bone sensation) with changes in the reflexes (knee, ankle, toe) are significant of cord degeneration, it must be remembered that similar cord disease has been repeatedly described in cases of leukemia, has been produced experimentally by interference with circulation and I may add from my own experience that it occurs now and then in profound secondary anemia. Nevertheless, the far greater frequency of occurrence of these symptoms in pernicious anemia gives them a suggestive value in diagnosis that cannot be ignored. In passing, I wish to state that in a few instances I have seen the nervous symptoms pronounced before there was notable anemia and this of uncertain type.

I have thus, perhaps, at somewhat wearisome length, but without great detail reviewed the outstanding hematologic and symptomatic features of pernicious anemia that we may have it before us for contrast with the conditions found in certain severe and prolonged secondary anemias, post-hemorrhagic or toxic, to which I referred in an early part of my discussion. I allude to those cases in which, with long continuance of the cause of secondary anemia and after what appears as an exhaustion of the reparative hematopoietic function, the character of the anemia changes, losing most of the features that ordinarily suggest secondary anemia. Those cases may reach extreme grades of severity and they may terminate fatally, apparently without any added cause other than the exhaustion of severe anemia; and for these reasons are likely to be regarded as pernicions anemias. Even before the fatal issue seems imminent, failure of all forms of treatment to improve the blood picture suggests a diagnosis of pernicious anemia. That there is a condition of exhaustion of the blood making powers in cases of continued anemia seems natural enough and was long ago mentioned by Laache and Ehrlich. The former found that the red cells increased from 1,600,000 to normal in two months in a case of acute post-hemorrhagic anemia while in a case of anemia from repeated rectal hemorrhages (hemorrhoids) the return to normal from 2,500,000 erythrocytes required eight months after all hemorrhages had ceased. Ehrlich showed experimentally that after repeated bleedings the regeneration was much slower than in cases of equally severe anemia due to a single loss of blood. In confirmation of Laache's observation, I may refer to two cases of my own in which attempts to relieve post-hemorrhagic anemias, after removal of hemorrhoids and cessation of all hemorrhage, failed completely till the anemia was partially corrected by transfusions, after which further impoverishment went on progressively under medical and dietetic treatment.

Profound anemia with red cell counts below 1,000,000 and with a color index of one and one plus may be found in the group of cases under discussion and by reason of its severity naturally suggests pernicious anemia. The differential diagnosis is by no means easy and in some cases, perhaps, impossible. A careful consideration of all of the data obtained by clinical and hematologic study must precede any decision. Off-hand diagnoses are the cause of most mistakes and it is important to remember that the possible discovery of a cause for a severe anemia may lead to successful treatment, whereas, a decision in favor of pernicious anemia will usually be followed by abandonment of any serious efforts.

A study of these cases of profound secondary anemias shows an absence of evidence of hemolysis, excepting that some fragmentation and other morphologic changes in the red cells may be suggestive. The urobilin excretion is subnormal, the color of the skin and plasma of the blood are not suggestive of hemolysis (though a certain yellowness of skin without change in the sclera may be seen in advanced and somewhat rapidly developed cases). On the other hand, pernicious anemia may be suggested by the fact that the number of leucocytes falls with prolongation of the anemia until a normal figure or possibly even a moderate leukopenia is reached while the neutrophile polymorphonuclears diminish progressively and relative lymphocytosis (not as a rule as great as in pernicions anemia and much less than in primary aplastic anemia) follows. Nucleated red cells of all kinds are usually wanting; exceptionally a normablast or even a megaloblast may be found. In most cases the red cells show much less morphologic alteration than that which is common in pernicions anemia, and polychromasia and granular pigmentation are far less conspicuous. True megalocytosis is decidedly exceptional though here and there a large giant red cell may be found. The blood platelets are often definitely reduced though less decidedly than in pernicious anemia.

Skein cells are commonly increased in number in pernicious anemia and are usually reduced in number in the other group. Intercurrent infections in such cases provoke a reactive neutrophile polymorphonuclear leucocytosis much more frequently than is the case in pernicious anemia; but in the latter disease, I have seen this quite marked though it is more often wanting or very slightly evident.

Enlargement of the spleen is distinctly more common in pernicious anemia than in the type of severe secondary anemias under consideration, but there are, of course, instances of the latter group (infectious, toxic) in which splenic enlargement may be a striking feature.

A consideration of these facts has led me to classify these cases as secondary hypoplastic anemia and I wish to emphasize the importance of recognizing the type because it evidences one of the tendencies of unrelieved chronic anemia and because of its suggestive resemblance to pernicious anemia.

I would not wish to give the impression that such a hypoplastic or asthenic condition of the hematopoietic system and especially the marrow is peculiar to any special form of anemia. I believe that is underlies the development of the condition, much discussed in former years, known as late chlorosis; and it may be the end stage of anemias due to continued slight losses of blood and various toxic anemias, whether hemolytic or otherwise, as well as the prolonged anemias of mild sepsis—focal infections, chronic infective endocarditis, etc. There are also similar changes in the blood picture in chronic leukemia, after x-ray treatments and in cases of continued icteroanemia. But in all of these except the hypoplastic anemia following obscure secondary anemia some features of the earlier conditions remain and the diagnosis, therefore, less obscure. When it has developed gradually from a secondary anemia of obscure etiology, the end picture may superficially resemble that of pernicious anemia so closely that careful blood studies and clinical investigations alone will enable the clinician to exclude the diagnosis of pernicious anemia. Less frequently primary aplastic is suggested and is to be excluded by a full review of the clinical course of the case and by the absence of the pronounced evidence of failure of bone marrow function characteristic of this disease.

THE RELATION OF SPLENIC SYNDROMES TO THE PATHOLOGY OF THE BLOOD.*

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Many diseases have been named on the basis of a purely symptomatic syndrome, the names being merely convenient hooks on which to hang a miscellaneous assortment of obscure conditions. The absence of definite etiology and pathology, however, is somewhat compensated for by a rather definite symptomatology which gives an appearance of reality to obscurity.

For many reasons, disease syndromes of the spleen have been most remarkable in this respect. The spleen is an organ, whose removal in health causes no profound or permanent change in the human economy, whose function, such as it may be, is readily taken over by other organs or tissues, but whose diseases, are capable, directly or indirectly, of producing most serious constitutional changes which may lead to death.

A survey of these so-called splenic syndromes should not be too closely concerned with the details, but it should rather be an attempt to obtain a perspective of the phenomena as a whole. The most interesting of the splenic syndromes are those which concern the blood. The blood may be looked on as an organ in the form of fluid, instead of a connective tissue medium, its function being to carry oxygen and food to the body, to remove from it the ash and waste products, and in addition to carry noxious agents of all sorts which may gain entrance to the blood, to the kidneys, mucous membrane, and skin for elimination, or to the vital laboratories, of which the liver is the chief, for defense. The spleen, considered from this broader conception, is concerned with the purification of the blood, and is one of the agents whereby worn-out red cells and infectious or toxic material of various kinds are filtered from the blood stream and directed to the liver, the great metabolic and detoxicating organ of the body. In other words, the function of the spleen and the pathologic misfortunes which it sponsors, concern chiefly the blood stream. It would appear that the spleen is not the principal agent, but that it is rather an organ of destruction through which the principal agent works.

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Always it is our desire to place our hands definitely on a certain organ and say, "Here is the trouble," but indefiniteness lurks around the spleen. Even when splenectomy results in alleviation of the symptoms, or in cure, we are by no means convinced that the spleen was the cause of the ailment. We are only sure that by removing it we have eliminated an organ of destruction or perhaps broken a vicious circle. It is my purpose at this time to speak of five syndromes in which the spleen may play a prima donna rôle. Four of these, splenic anemia, pernicious anemia, hemolytic icterus, and polycythemia, concern the red blood cell, and one splenomyelogenous leukemia, concerns the white blood cell.

SPLENIC ANEMIA

Splenic anemia is a clinical entity. Its chief charactersistics are idiopathic enlargement of the spleen and chronic progressive and intercurrent anemia, with leukopenia. These are the antecedents of phenomena related to portal circulatory obstruction, such as gastro-intestinal hemorrhage and ascites, which eventually cause death. If an attempt is made to study the clinical picture of splenic anemia in its minutiae, it will be found that the picture fades quickly, since the cause of the condition is obscure and pathologically often does not present distinctive characteristics; only when the picture is seen as a whole and by exclusion is a diagnosis possible.

Since the publication of Osler's article, in 1900, the principal advances in the investigation of splenic anemia have been made in connection with the recognition of those conditions which, although they simulate splenic anemia, have been found to have a specific cause. Hemolytic icterus, in which the jaundice is slight and intermittent, had been confused with splenic anemia. Occasional cases of pernicious anemia, in which the spleen is greatly enlarged, had also been thus improperly classified, not because the resemblance was striking, but because an enlarged spleen and the anemia were regarded as characteristic of the disease, and further investigation for the purpose of making a correct diagnosis was not made. The splenomegalia of syphilis also is now recognized, and the enlarged spleens of chronic malaria, chronic sepsis, tuberculosis, and Gaucher's disease have been removed from the splenic anemia group as characteristic diagnostic features have been recognized. Various competent observers believe that von Jaksch's disease (infantile pseudoleukemia) is the infantile form of splenic anemia, in which the presence of a leukocytosis and abnormal marrow cells may be explained by the transitional characteristics of infants' blood.[7] Von Jaksch's disease is probably a syndrome caused by various infantile disorders. There still remains, however, a number of cases in which the clinical picture of splenic anemia is present, and the cause is unknown.

The chief pathologic conditions found in the spleen in splenic anemia are generalized fibrosis, thrombophlebitis, and atrophy of the pulp cells. The deposits of connective tissue, endophebitis, and compression atrophy of the malpighian corpuscles, are not grossly different from those of the splenomegalia of sphilis, malaria, and other diseases of known origin, associated with fibrotic spleens.

A patient with chronic fibrotic splenomegalia who presents characteristics of chronic secondary anemia, but who is not relieved by treatment, is potentially a sufferer from splenic anemia, and will probably be cured by splenectomy without regard to the cause of the disease. This has been especially true of patients with syphilis and malaria.

THE RELATION OF SPLENIC ANEMIA TO BANTI'S DISEASE

In 1883, Banti described splenomegalia and chronic anemia with cirrhosis of the liver. In numerous communications since, he added various diagnostic criteria which have still further obscured rather than clarified the subject. However, these criteria have made it possible to designate as Banti's disease almost any form of splenomegalia accompanied by anemia and liver changes in which a definite etiology cannot be established. Moschowitz, in a critical analysis of Banti's disease, came to the conclusion, with which I think nearly all observers agree, that Banti's disease cannot be distinguished from splenic anemia, and that what is ordinarily called Banti's disease is a terminal stage which may be found in some cases of splenic anemia. That many patients die from splenic anemia without liver changes is certain. That some patients have cirrhosis of the liver at an early stage of splenic anemia is also certain.

Ascites, without changes in the liver may occur in splenic anemia. The mere presence, therefore, of ascites in connection with splenomegalia is not sufficient to demonstrate that the liver is at fault, although I believe it may be said that anemia is not a marked feature of primary cirrhosis of the liver even if there is ascites, while in splenic anemia it is an early and more or less continuous manifestation. It seems probable that certain as yet unidentified toxic agents strained out of the blood by the spleen are responsible for the fibrosis of the spleen and the changes in the spleen for the cirrhosis of the liver.

It is also known that the spleen acts as a filter, removing bacteria from the blood stream, as in typhoid and tuberculosis; protozoa, as in syphilis and malaria, and undoubtedly other noxious agents. The spleen, unable to destroy these various substances, sends them through the splenic vein to the liver for destruction, and the reaction of the liver to chronic irritants is in the nature of a connective tissue disease which we speak of as cirrhosis, without regard to its cause. If the spleen is unable to rid itself of all the material that it filters from the blood stream, sequestration of the filtrates may occur and give rise to the various splenomegalias with assured etiology, such as those due to the *Spirocheta pallida, Plasmodium malariae, Bacillus. typhosis, Bacillus tuberculosis,* and to others which have as yet no known etiology.

The spleen has differentiated and characteristic cells. It is, therefore, capable of varied pathologic conditions. The liver has but one type of cell with different physiologic activities, and its processes are less varied. The reaction of the liver to chronic irritation, which reaches it by way of the portal system without regard to cause, is usually a fibrosis which we call portal cirrhosis.

The portal cirrhosis of Laennec does not vary in type, whether produced by gin or pepper, or whether it is found locally around areas of tuberculosis, gumma, or cancer. Usually cirrhosis is diagnosed with the hobnail variety of Laennec in mind. Yet in my experience, accepting 1560 gm. as the weight of the average liver, the cirrhotic liver is as often enlarged as it is contracted. As pointed out by Osler, the beer drinker and others may have huge, smooth, cirrhotic livers, in which the characteristic fibrosis is smoothed out by deposits of fat. On this assumption, therefore, it could be said, inferentially, that the type of splenic anemia which is accompanied by cirrhosis of the liver and has been called Banti's disease is a condition in which the fibrosis of the spleen and the fibrosis of the liver are due to the same agent, that they have a common etiology, and that the removal of the spleen when the disease is not too far advanced cures the anemia by preventing excessive blood destruction and prevents these toxic substances reaching the liver so that the cirrhotic process in the liver itself is checked and the ascites disappears. We have patients, whose cases fulfilled this description, alive and in good health for years following splenectomy.

I have previously called attention to the fact that there is another element of relief following splenectomy which must be taken into consideration. In the normal condition 25 per cent of all the blood carried to the liver comes through the splenic vein, while in enormously enlarged spleens the splenic vein may be the size of the portal vein. The removal of the spleen in these cases relieves the liver of an overload, and it then becomes able to carry on its function without those evidences of circulatory obstructions that result in ascites and hemorrhages. Splenectomy may, therefore, be looked on as equivalent to establishing an Eck fistula or the condition we attempt to bring about by establishing collateral circulation, after the method of Talma, Morison, and Drummond, through the vascular channels of Sappey, a condition with advanced cirrhosis described by Fagge as found in some persons killed by accidents while in apparent health.

The changes found at necropsy after death from splenic anemia are not necessarily to be considered the condition that exists throughout the whole course of the disease; they are to a large extent terminal. All the patients operated on who were not in an advanced stage of the disease recovered, after splenectomy, and the majority have remained well. We must, therefore, look on ascites, edema of the lower extremities, and cardiorenal decompensation as terminal conditions which increase the dangers of operation. Yet the spleen may be removed successfully even in the terminal stage of the disease. We have operated on a number of patients for splenic anemia who had extensive cirrhosis of the liver, many of these of the Laennec type. Following splenectomy the ascites disappeared and the hemorrhages from the stomach stopped; the majority who recovered from the

operation are alive and apparently well after some years. The spleens in cases of splenic anemia are usually adherent and difficult to remove, and in the late cases when endophlebitis and thrombosis are marked the danger of an acute thrombosis of the large vessels of portal circulation is great. We have operated on seventy-four patients with splenic anemia of unknown origin with nine deaths. This does not include a number of splenectomies for splenic anemia of known origin, such as syphilis.

PERNICIOUS ANEMIA.

The etiology of pernicious anemia is unknown, the early symptoms are indefinite, and by the time the diagnosis can be made the disease is incurable. The disease may be described as a progressive degeneration of the red blood cell or, more picturesquely, a cancer of the red blood. In contrast to splenic anemia, which is of the secondary type, the blood picture in pernicious anemia has characteristic cells which, more or less, identify the disease. The color index, or hemoglobin percentage, is higher in proportion to the number of red blood cells than in the secondary anemias. The lemon color of the skin, sometimes with an icteroid hue, is so different from the color of the skin in the secondary anemia that sometimes a diagnosis is possible by looking at the patient. This icteroid hue is more prominent in cases in which hemolysis is marked, as shown by examination of the duodenal content after the Schneider method. If we might assert that in cases of pernicious anemia in which hemolysis is most marked patients have a greatly enlarged spleen or that the spleen exhibits definite pathologic changes, we would have succeeded in establishing a direct connection between the enlarged spleen so often found and the disease. Unfortunately, our experience, does not support this hypothesis, and the size of the spleen does not seem to bear a definite relationship to the severity of the disease. Necropsy, after death from pernicious anemia, as a rule, shows a small spleen, but in two only of our cases was the spleen below normal weight at operation, and both were terminal cases.

The average weight of the spleens removed in our cases of pernicious anemia was 400 gm., exclusive of two large spleens, one of which weighed 2220 gm. and the other 1600 gm. It seems probable, therefore, that in pernicious anemia the spleen is enlarged during the early and middle stages, and that the contraction so often found at necropsy is a terminal condition. The question is as yet unanswered whether pernicious anemia is a definite and specific entity, or whether it is a terminal change of several conditions, and recognized only as pernicious anemia when the patient has reached a stage which we know will eventually cause death. I have been struck with the fact that after complete gastrectomy the patients have much the appearance of pernicious anemia and even more striking is the resemblance between anemias having their origin in certain diseases of the proximal half of the colon and pernicious anemia.

Any form of treatment for pernicious anemia may prove, or at least may appear, to be beneficial. Even without treatment these patients have their ups and downs, and it is not an infrequent clinical experience to have a patient present himself with symptoms which might be construed as being those of an early pernicious anemia, and then with or without treatment recover and remain well. In eliciting the history, the physician finds that the symptoms are often indefinite in the earlier stages, before the blood changes become characteristic.

Eppinger first suggested splenectomy as a cure for pernicious anemia, and the early reports with the abundant testimony of temporary relief were quite sufficient to give the operation a fair trial in this hopeless disease. Considering the confusion which so often attends the early diagnosis, it seems probable that obscure cases of hemolytic icterus and splenic anemia have been accidentally included in the pernicious anemia group. Removal of the spleen in such cases may have contributed to the impression that splenectomy may cure pernicious anemia. In the investigation of our cases of splenectomy for pernicious anemia, great, although usually temporary, improvement has been noted. There is gain in weight, and improvement in the hemoglobin in the blood from an average of 38 to 72 per cent, and in the red cells from 2,000,000 to 4,000,000. Giffin and Szlapka found that of fifty patients with pernicious anemia, on whom splenectomy had been performed in the Clinic more than four years before. 21.3 per cent lived more than three years, and 10.6 per cent are still alive more than five years. These patients have lived on an average of two

and one-half times as long as a comparable group of nonsplenectomized patients. It would appear that the spleen did not, on its own initiative destroy the red cells, but that it acted rather as the agent of destruction, and splenectomy accomplished its purpose in so far as it removed the destructive agent, breaking up a vicious circle, but probably not otherwise influencing the course of the disease. Evidently in pernicious anemia the patient is not able to produce normal cells, but the cells are capable of function, and splenectomy prevents their destruction. The cord changes are not greatly improved by splenectomy. In our experience in the cases in which the results were most favorable the symptoms were those less characteristic of pernicious anemia. In young and middle aged persons, in whom the disease is rapid, especially if hemolysis is known to be marked, splenectomy is worthy of trial. On the whole, it may be said that whenever pernicious anemia has developed to the stage in which the blood is characteristic, it is probably incurable, and terminal splenectomy is to be regarded as a means of palliation, and not of cure. We have splenectomized fifty-four patients with pernicious anemia with three deaths (5.5 per cent). The three deaths occurred in the first nineteen cases and were due to the fact that the patients were operated on during crises in an exacerbation of the disease. Since we have operated on these patients only when they are on the upgrade, as after transfusions of blood, we have had no deaths in thirty-five cases.

HEMOLYTIC ICTERUS.

Hemolytic icterus has not been classified with the anemias, but as pointed out by Kanavel and Elliot, the peculiar splenic activity results in an anemia which is the cause of death. The etiology of hemolytic icterus, as of splenic and pernicious anemia, is unknown. A well developed case of hemolytic icterus stands out with a vividness unequalled in splenic anemia or in pernicious anemia. These three diseases, all of unknown etiology and lacking sound pathologic foundation, when examined in detail are without distinctive features. Viewed in the perspective they are outstanding clinical entities. The characteristic features of hemolytic icterus are an enlarged spleen, chronic jaundice with exacerbations, normal bile colored stools, and absence of bile in the urine. It is certain that in hemolytic icterus the spleen destroys, unnecessarily, the red cells; the enlargement of the spleen may be in the nature of a work hypertrophy. Enlargement of the liver is usually present and may also be a work hypertrophy. In some of our cases sections from the liver showed definite hyperplasia of the cells. Sixty per cent of our patients splenectomized for hemolytic icterus had gallstones due to the great amount of pigment which inundates the liver from the destruction of the red cells. As these gall stones may cause infection of the biliary tract, obstruction, and so forth, a very confusing clinical picture results, which the history and enlarged spleen must be relied on to clear up.

There are two types of hemolytic icterus, the familial or congenital type of Minkowski, and the acquired type of Hayem and Widal. In the familial type the disease may be noticed from infancy and it may not be progressive; the patients live the allotted span of years in a fair degree of health, but with more or less jaundice throughout life. These cases are not uncommon and are to be seen in every community; in many instances a more serious condition develops which makes them indistinguishable from the acquired type, and like the acquired type, the disease progresses in the course of some years to a fatal ending.

Chauffard and Widal have pointed out that the red cells are less resistant in hemolytic icterus than normally, and our experience confirms these observations. Sanford has worked out a simple and very reliable method for testing the fragility of the red cells; this is being used in the Clinic extensively and with great satisfaction. We have removed the spleen from thirty-seven patients with hemolytic icterus with one death. This patient was operated on during a crisis; this death should not have occurred.

POLYCYTHEMIA.

Polycythemia (rubra vera) is the opposite of anemia and signifies a condition of the blood in which the number of red cells is decidedly in excess of normal. This excess is constant and not due to temporary dehydration, such as sometimes results from diarrhea or profuse sweating, but depends on organic changes in the hemopoietic system, the nature of which is little understood. In polycythemia the red blood cells may reach from 8,000,000 to 12,000,000 and the hemoglobin may reach as high as 130; the increased viscosity

of the blood causes the patient to present an appearance of cyanosis. The pathology of this disease is obscure, but one characteristic feature is the enlargement of the spleen. Heretofore, the attempt, based on what we know of the physiology and pathology of the spleen, to connect the spleen definitely with this syndrome, has failed, and the splenomegalia has been looked on as an incidental rather than an etiologic factor in polycythemia. This interpretation is still further borne out by the fact that when death occurs other organs show changes of a somewhat similar nature to those in the spleen. Yet the enlargement of the spleen is suspicious, and the history of medicine is the grave yard of dogmatic attempts to substitute postmortem pathology of terminal conditions for the pathology of the living.

Gastric hemorrhages are one of the occasional signs of polycythemia, and in the anemic conditions which result, the spleen is reduced in size and the blood does not exhibit the characteristics of polycythemia. When the symptoms of the disease are reestablished there is coincident enlargement of the spleen.

Polycythemia was described by Vasquez, in 1892, and in an early period Osler added greatly to our knowledge of the subject. If we accept the opinion of some careful observers who believe that the spleen not only destroys abnormal red cells, but also, to a considerable extent, controls through some internal secretion the productivity of the red cells of the bone marrow, we might explain the phenomena of polycythemia on the hypothesis that the spleen failed to destroy the normal number of red cells and produced a hyperactivity of the bone marrow.

In the Clinic, we have seen a few patients with polycythemia; one patient with an undoubted polycythemia was splenectomized shortly after recovery from a severe hemorrhage. The spleen weighed about 900 gm. General abdominal exploration did not show any remarkable pathologic condition outside the spleen. A section from the liver did not show hepatic disease. Following splenectomy the patient has regained his health to a remarkable extent, and all signs of polycythemia have disappeared. The time has been too short for us to know whether this remarkable transformation is permanent, but it leads to the thought that the spleen may be more closely connected with the disease than had been supposed and that splenectomy may, in certain cases, be indicated.

LEUKEMIA.

If there has been any one condition believed to be nonsurgical and incurable, it is splenomyelogenous leukemia. The theory has been that at least 99 per cent of patients operated on for the disease would die as a result of the operation, and that the one who lived would not be benefited, Yet we have long known of therapeutic agents (benzol, x-ray, and so forth), which reduced the size of the spleen and, as might be expected, also improved the condition of the blood. With the use of radium, which could be applied readily over the area of the spleen, a vast change came about in the therapeusis of splenomyelogenous leukemia. I do not know of any clinical experience that is more striking than the good result which follows the application of radium over a huge leukemic spleen. Many times the spleen shrinks so much as to dispappear below the left costal margin, and the white cells decrease from hundreds of thousands to below 10,000. I have even sseen leukopenia produced, the white cells decreasing from 600,000 to 3,700 in five weeks. With this extraordinary reduction in the size of the spleen and the reduction in the number of white cells an equally extraordinary improvement in the anemia takes place, and the patient is marvelously benefited. As the spleen again gradually increases in size the white cells increase, the red cells decrease, and the patient loses ground. It is well to eliminate all of our presumptions concerning this disease and to pause for a moment in perspective. Have we, in considering operation in this condition, as in so many other instances, allowed tradition to hamper progress?

My first experience in splenectomy for splenomyelogenous leukemia was with a patient who came to the Clinic with a greatly enlarged spleen, and a white cell count of 300,000 and a history of having had the disease for two years. There had been great improvement under x-ray treatment; at one time the white cells were reduced by it to below 50,000, but as regularly happens, the x-ray had finally lost its effect, and the patient's condition on examination was worse than it had been at any former time. The patient herself was greatly impressed with the definite connection between the size of the spleen and her condition,

and was anxious to have the spleen removed. I operated and the patient recovered from the operation uneventfully. Within ten days the white cells had dropped to less than 40,000 and she was greatly improved. She lived in good health more than two years following the splenectomy. On the basis of this experience, we have in a number of instances reduced the size of the spleen with radium until the blood count approximated the normal, and then removed the spleen. We have splenectomized twenty-nine patients for splenomyelogenous leukemia with one operative death. This patient died from pulmonary embolus fourteen days after operation. Seven of these twenty-nine patients are known to be alive and in good condition more than three years following operation, four more than four years, and one more than five years. I can not believe that these patients are cured, but the experience has been interesting and suggestive.

It is possible that we recognize leukemia as a disease only after it has reached the hopeless stage, or that it is a terminal condition of a much more common, although unrecognized, malady. These are interesting problems which can not now be answered. Leukemia has been called a cancer of the white cells. The leukemic spleen is not adherent, as a rule, and after it is reduced by radium is removed readily.

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CASE OF TRUE PNEUMOTYPHUS.

H. C. Herrman, New York (*Journal A. M. A.*, Jan. 21, 1922), cites a case of typhoid fever, complicated by a relapse of twelve days' duration, which was ushered in by a typical lobar pneumonia. The Widal test showed a positive agglutination for the true *Bacillus typhosus* in all dilutions.

TENDER PRESSURE POINTS WITH SO-CALLED SYMPTOMLESS GALLSTONES.

G. A. Friedman, New York (*Journal A. M. A.*, Jan. 21, 1922), states that tender pressure points in the intercostal spaces at the level of the gallbladder, in the continuation of the right axillary, scapular, posterior median line are almost always found in persons suffering from disease of the gallbladder, even when tenderness in the gallbladder region proper cannot be elicited. The presence of these spots is nearly as characteristic as the history in the group of so-called typical cholelithiasis.

PHYSIOLOGIC RATIONALE FOR INTRATHORACIC SURGERY.*

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Individuals who participate advantageously in the competition of life benefit themselves morally, mentally, physically and economically, and their benefits are shared by the community. In consequence there is a growing demand upon medicine to protect and promptly to restore mental and physical activity rather than merely to prolong life.

Intrathoracic therapy is particularly important in this connection. Incompetence of respiration or of the circulation seriously handicaps mental and physical activity. Diseases affecting heart, lungs and pleura account for a large and increasing proportion of the deaths and disability in individuals in the most productive periods of their lives.

The chief objectives of intrathoracic therapy are therefore the protection and restitution of the circulatory and respiratory functions. Hence it is essential to know the mechanisms upon which those functions depend how they are impaired by maladies and by what means the maladies may be controlled so that every opportunity for functional recovery may be provided.

Insofar as the treatment of diseases within the chest is directly concerned integrity of the circulation depends chiefly upon the status of the lesser circulation because the systemic circulation is dependent principally upon the volume and condition of blood delivered to the left auricle. Indeed the protection of the pulmonary circulation is so essential to the preservation of life and activity that the efficacy of any methods of intrathoracic treatment can be estimated solely upon this basis. In other words the latent energy of the right heart must not be overtaxed during treatment and the vascular area of the pulmonary circulation must be restored thereafter. This indicates the necessity of recognizing the interdependence of circulation and respiration. Normal respiration is effected by unrestricted mobility of the thoracic parietes particularly of the diaphragm; by undiminished elasticity of lung tissue; and by the maintenance of an adequate and flexible intrapleural negative pressure.

Architecture has been called frozen music. Anatomy may be termed the morphology of normal function; and morbid anatomy the morphology of malfunction. Treatment of disease is aiding in the replacement of abnormal with normal tissue and whatever be the form of treatment, whether medical or surgical, it can only provide opportunity for recovery by making tissue regeneration possible. It follows that successful treatment depends not alone upon a prompt recognition of the existence of morbid anatomy, but also upon an estimate of the ability of the affected individual to control that process spontaneously.

Indications for surgical intervention depend: first, upon the existence of lesions that either cannot be controlled spontaneously or are controlled incompletely after protracted or repeated periods of disability; and second, upon the possibility of operations to remedy the defects so as to provide a blood supply that will assure the tissue regeneration required to rehabilitate function.

The amazing progress in extra-thoracic surgery has been due to the development of more exact methods of observation and of operating, which have revealed pathogeneses and have compelled earlier and more accurate diagnoses. An almost equally amazing lack of progress in intrathoracic surgery is due chiefly to the high mortality rates that have attended major operations within the chest and the protracted distress, disability and incomplete recoveries that as a rule have followed. Surgeons have failed to appreciate the necessity of controlling the pulmonary circulation upon which depends life, tissue repair and functional recovery to an extent that makes this control the dominant factor in all intrathoracic treatment. Otherwise the surgical methods and judgment used have been the same as have been successful elsewhere.

The field of intrathoracic surgery to be considered will be restricted to intrapleural or transpleural procedures because extrapleural operations inside the chest are less directly involved. It will be necessary to consider only pleural inflammation and the effects of pulmonary deflation and compression. Pleurisy is used to define an inflammatory process due to irritation of bacterial or neoplastic cells, or of blood or toxins that have not been introduced mechanically, either by acci-

*Read before the Medical Society of the University of Wisconsin, Feb. 8, 1922.

dental or surgical injury. Pleuritis is traceable to such traumatisms. Pulmonary deflation is the collapse occasioned by a substitution of atmospheric for negative pressure; pulmonary compression is occasioned by pressure in excess of the atmospheric.

Inflammation of the pleura is the logical starting point because the prevention and treatment of empyema is the commonest demand for intrathoracic procedures and because no intrapleural intervention fails to provoke pleuritis. Serous cells are persistent in the presence of irritants and inflammation and possess remarkable powers of regeneration. Serous cavities are resistant according as they are able to absorb exudates, which depends upon the blood supply, and to maintain serous surfaces in apposition, which is in addition affected somewhat by parietal rigidity. Pleural irritation provokes effusions more rapidly than they are absorbed. Usually there results a demonstrable accumulation of exudate that separates pleural surfaces and causes some pulmonary deflation. Pulmonary deflation reduces the blood supply of the visceral pleura which, because of a richer blood supply, is more potent in defense than the parietal pleura.

Pleural inflammation left to its own devices will limit itself by the formation of adhesions or will continue until the effusion has compressed the lung and tension prevents further exudation.

Associated with pleural irritation is an inhibition of motion of the affected side of the chest. The most significant part of this limitation of motion is an early paresis and later paralysis of the diaphragm which takes a high position because of intra-abdominal pressure. A paralyzed diaphragm is prone to recover its normal range of motion incompletely. Middleton has found that the extent of diaphragmatic disability is a fairly accurate measure of general disability after pleuritis because it limits vital capacity.

The methods of treating pleural inflammation are thus established: The exudate must be removed promptly and in such a manner that no air is allowed to enter the chest and produce deflation. As soon as possible after the acute process is controlled, breathing exercises must be started to aid in dissipating adhesions and in reactivating the diaphragm. These methods have two excellent virtues: They are simple and they are effective in promoting early and complete recovery. Other methods are effective in curing empyema, but the patient does not recover his normal range of activity. The average disability of soldiers so treated is rated between fifty and sixty per cent. Four-fifths of that disability can be avoided.

The evil effects of pulmonary deflation and compression are chiefly due to resultant abnormalties in the circulation. The air cells are surrounded by a network of capillaries whose size and shape are determined by two factors. If the air cells are dilated, the capacity of the capillaries is increased and more blood is required to fill them. If the capillaries are filled, they elongate; the capacity of the air cells is increased and more air is required to fill them. Thus within limits there is an interacting mechanism under dual control that makes possible the adaption to the sudden and wide demands of increased or decreased activity for more or less fuel. Beyond those limits may be noted the air hunger of anemia and the dyspnoea of chronic passive congestion. Still more significant is the common occurrence of acute cardiac dilatation due to too great intratracheal tension or to intrapulmonary congestion and that due to general physical over-exertion.

Pulmonary deflation and compression may be partial or complete; focalized, localized, or general; sudden or gradual; and due to the pressure of air, exudates or tumors upon the pleura or within the lung. As the pressure upon the lung increases, it opposes the pulmonary vessels, and more and more blood, destined to the affected area, is shunted into adjacent areas wherein the pressure is less. The excess blood overfills the capillaries into which it is shunted and produces a dilatation of the corresponding air cells, a compensatory physiologic emphysema. This accounts for the halo of emphysema that surrounds patches of bronchopneumonia and focalized interstitial hemorrhages. It also explains the margin of Skodaic resonance usually present just above pleural effusions as well as the occurrence of contralateral emphysema when unilateral pleural effusions or pneumonic consolidations are massive.

Changes in the compressed or deflated lung are also noteworthy. Complete interruption of the circulation through a branch of the pulmonary artery causes atrophy with contraction in the lung deprived of the blood and of the contagious lung incapacitated by the contraction. Atrophy is unaccompanied by necrosis if the bronchial

blood supply continues. Long-continued deflation makes subsequent inflation difficult or impossible because of the contraction of vessels, bronchi and elastic tissue and of the thickened pleura.

Tissue repair in general is best when function is reduced enough to decrease irritation, but still sufficient to assure ample blood supply. Repair in lung parenchyma is as rapid and as perfect as in any tissue. The ultimate healing is said to be scarless. Presumably it is best when the unit volume of blood is the greatest which occurs at a position between inspiration and expiration. According to Cloetta the unit volume of blood is greatest when the lung is sufficiently expanded to make the main pulmonary vessels straight and insufficiently expanded to elongate them. When the lung is inflated to this extent blood is delivered against the least peripheral resistance. Probably the same holds true for the bronchial artery though vasomotor control of this vessel is more effective. We assume that the mean position taken by the lungs when the diaphragm is paralyzed pretty closely fulfills all requirements for optimum defense and repair because it is the natural reflex position assumed in pneumonia and pleurisy, because experimentally, healing advances most rapidly in this position and because it is associated with diminished respiratory excursions.

The above descriptions of intrapulmonary changes have presumed a competent heart and an adequate amount of blood in currency. If the heart muscle is weakened, or anemia or exemia are present, the compensatory fluctuations in the pulmonary circulation are less perfect. An individual in fairly good condition can withstand a considerable degree of positive pressure in one side of the chest if it be induced gradually, and tolerate the acute pneumothorax of a radical thoracotomy performed without differential pressure. Another individual in poorer condition, or the same individual after over-exertion, would succumb if subjected to such conditions. When resistance in the pulmonary circulation is increased suddenly it must be met by an equally sudden increase in cardiac effort, and then there is a rapid diminution in latent myocardial energy or the margin of safety. If the time factor is increased, an opportunity for cardiac readjustment and later for hypertrophy is provided, but then there is a prolonged or permanent reduction in the margin of safety and a proportionate limitation of physical activity—hence the importance of protecting the pulmonary circulation during and after intrathoracic treatment.

The physiological indications for the most favorable treatment of intrapulmonary lesions are clearly defined for both varieties—those that are and those that are not spontaneously recoverable. The former need only the prevention of pulmonary deflation or compression and a reduction in pulmonary excursions to assure the richest possible blood supply. If pleuritic effusions are present, they must be removed. Frequently repeated aspirations are sufficient. If not, intracostal, airtight, one-way catheter drainage is necessary. Reduction in pulmonary excursions is usually accomplished satisfactorily by rest in bed. When this reduction is insufficient the diaphragm can be temporarily paralyzed by injecting proper strength alcohol into the phrenic nerves. The usual adjuncts—fresh air, sunshine, proper diet, opiates, cardiac stimulants, tonics and the like—are more or less necessary. One point is insufficiently recognized: Local resistance cannot be high if general resistance is low; general resistance is a synonym for integrity of the hematopoietic system; systemic hematopoietic integrity is impossible with anemia. Repeated blood transfusions are frequently indicated and infrequently performed.

Spontaneously irrecoverable lesions are of two types: Acute abscesses and necroses in granulomatous infiltrations that are uncontrolled because they have created the tension or intrapulmonary compression sufficient to produce local anemia. Drainage must be provided and can be obtained by introducing an aspirating needle intercostally and under fluoroscopic control, tapping the abscess. The needle is followed by a small trocar and a catheter is inserted. Thus drainage and irrigation can be attained.

The second type of lesions irrecoverable spontaneously are abscesses about foreign bodies, granulomas that are beyond individual resistance, neoplasms, and bronchiectases. They require some form of lung operation: pneumotomy, pneumostomy or pneumectomy. Lung tissue not only heals splendidly, but has marvelous compensatory abilities so that wide resections and exsections are possible. If much tissue is removed, it is safest either to paralyze the diaphragm temporarily by injecting the phrenic nerve with alcoholic solutions

graded in strength to produce the period of inactivity required or to induce permanent paralysis by resecting the nerve.

In addition to using all the usual and unusual surgical precautions, the physiologic requirements for performing a thoractomy in the absence of adhesions with due regard for immediate safety and ultimate recovery are as follows: Incision must be made and closed so as to secure immediate healing and later return of motion. The pulmonary circulation, and through it the heart muscle, must be protected during operation by controlling the amount of pulmonary deflation. (Differential pressure of some form is a necessity, not because operations cannot be performed without it, because they can. They cannot be performed as safely under the most favorable conditions, and many can be conducted safely with differential pressure under unfavorable conditions that could not be completed without it.) The lungs must be placed in condition to stand immediate reinflation and resumption of respiration. (Again differential pressure is necessary.) The lungs must be in full inflation as the chest is closed. (Again differential pressure is required.) Parietal closure must be airtight. Provision against the inevitable postoperative pleural effusion and consequent pulmonary deflation must take some form of drainage. Suitable breathing and body exercises must begin early and be continued in order to hasten and to complete the recovery. Adjunct proceedures in treatment are those mentioned in the case of intrapulmonary lesions.

Two more intrathoracic proceedures will be included in this summary: Operations upon the heart and pericardium and artificial pneumothorax.

Drainage of the pericardium should be accomplished as Whittemore has proved by an extrapleural intercostal insertion of a catheter. Operations upon the ventricles are best performed by thoracotomy. The transpleural exposure is excellent and easily obtained.

Artificial pneumothorax was introduced to combat pulmonary tuberculosis. In spite of excellent results reported, there is nothing in normal physiology to commend it. Better results can be obtained by diaphragmatic paralysis or by extrapleural pulmonary collapse after multiple rib resections.

In conclusion it will be necessary to answer one question. Are methods here advocated because they are physiologic and to which may be attached the damning epithet scientific, effective clinically? Pleurisy and early empyema treated as outlined will show an average ultimate disability of less than five per cent. Empyema treated by old methods of open drainage show an average late disability of over fifty per cent. Thoractomy performed under fairly good conditions gives approximately the average mortality rate of operations of similar gravity performed elsewhere in the body. The late disability of these operations has been most accurately determined by Doctor Middleton and is less than one-fourth that resulting from older and non-physiologic methods of treating empyema.

SOME RECENT ADVANCES IN CHEMISTRY AS AIDS TO THE CLINICIAN.

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Advances in chemistry have been so numerous during the decade just passed, that it would be quite impossible in the time allotted to do more than catalogue them. Rather than do that I have selected three general fields of work in which notable progress has been made: the factors concerned in the acid-base equilibrium of the body, blood and urine analysis, and the study of metabolic rate.

Of these subjects none is of more fundamental importance, in health and disease, than the acid-base equilibrium of the body, the factors which maintain it, the disturbances which are associated with any changes in it, and the recognition of it.

Life is always producing acids. CO_2 results from the oxidation of C; H_2SO_4 and H_3PO_4 from the oxidation of S and P in the proteins and lipoids; while in this combustion intermediate organic acids appear. Few organisms however can survive an acid reaction within their cells, and in the higher animals there is no more certain method of destruction than the development of an acid reaction within the cells.

To digress for a moment in emphasis of this point, the war gases illustrate on a great scale the deadly effects of producing local tissue acidosis

in some essential structure. Phosgene and chlorpierin for example penetrate and hydrolyze in the cells of the alveoli, producing HCl. These cells liquify, disintegrate, die, and the animal as a whole succumbs because of this destruction of alveolar cells. "Mustard gas" penetrates the skin and enters the active epithelial cells of the dermal layer concentrating in the lipoids in which it is most soluble. There it is slowly hydrolyzed to HCl, the cells in time grow acid and as a result die, liquify, autolyze, and slough off. These gases are among the most toxic substances ever described—but they are toxic simply because they produce acidity within the cell. It must be clear then, that the living cell, if it continues to live, must secure protection not only against such foreign acids but against the acids which it produces itself.

In all probability, life started in the tidal waters of a warmer, less salty ocean than we have today. This ocean water was slightly alkaline from the leaching of the disintegrating rocks and was richer in calcium and carbonates than it is today. In such a faintly alkaline medium the acid-base equilibrium of the tiny masses of protoplasmic jelly could easily be maintained by direct diffusion. The small size of the early forms of life, the relatively great surface which they exposed and the enormous volume of ocean water about them was all that was necessary to prevent accumulation of acids within the cell.

With increasing association of cells into complex colonies, the sufficiency of the surrounding sea water in preventing cell acidosis in time reached its limits. Systems of circulation developed in some colonies which enabled them to survive and to develop new complexities. Finally so efficient a type of circulatory system developed that life was able to quit its ocean birthplace and adventure out upon dry land and even into the air. Aside from its increased efficiency as an oxygen carrier and in the transport of supplies the human circulatory system is essentially like that of the primitive ocean water but with added factors which enormously increase its efficiency as an acid preventer. During normal life it easily suffices to keep the cells neutral. Even under the forced draught of violent and prolonged exertion and profound fatigue of fevers, anaesthesia, and starvation, it is able to take care of the excesisve amount of acids produced without itself growing acid. This is essential, however, for should the blood become even slightly acid, the equilibrium is lost and death is inevitable.

The cause of death in tissue acidosis appears to be due to the fact that the proteins which make up the internal gel structure of every cell, become acid-proteins, imbibe water, swell, liquify, and digest. The structure of the cell is lost in this general breakdown to liquid; with loss of definite structure goes loss of order and direction of reactions and so loss of function and death. This general process we call autolysis and it may be set in motion at any time by an excess of even so weak an acid as carbonic.

Let us consider in more detail the factors which are involved in maintaining the acid-base balance of the body. The blood consists of a mixture of $BHCO_3$, CO_2, NaCl, acid and basic phosphates of Na and K, oxyhaemoglobin, free O, plasma proteins, urea, and ammonium salts. All these substances together constitute the buffer factors of the blood. By a buffer in this connection we mean a substance into which acid may be poured without making the solution appreciably more acid in reaction.

The true acidity of a solution is its H ion concentration. This is susceptible of very exact measurement by the potentiometer—an electrical device which has been perfected during the last few years. Water is our standard of neutrality It has a H ion concentration expressed by the figure 7.0. Any figure larger than 7 denotes an alkaline reaction; any figure smaller an acid reaction—that is a solution dissociating more H ions than are found in pure water. The blood has a H ion concentration of about 7.4 on this basis and is therefore slightly alkaline. Its normal variation is within the range 7.3 to 7.5. If it ever reaches the level of acidity of pure water—that is a H ion concentraton of 7.0—coma is the expected result. Such a high acidity as this may however be tolerated for a time. On the other hand if alkalinity increases to the figure 7.8 tetany is likely to result. Any wider divergence on this scale will mean quick disaster to the organism.

We may form some estimate of how narrow this range actually is perhaps by the following figures. If we take a liter of pure water and add 1 drop of 4% NaOH we get the reaction of normal blood—7.3. If we add 1½ drops we get 7.5; with 2 drops we reach 7.8 the alkaline danger line,

and if we add a drop more, we have a medium so alkaline that were it blood it would be fatal. On the other hand, while the organism can just tolerate the acidity of distilled water, adding to a liter a drop of 3.6% HCl gives us an acidity of 6.8, 2 drops give an acidity of 6.5 on our scale, in which a tissue cell will quickly go to pieces and which would kill were it the reaction of blood. But suppose we have present some buffer such as a phosphate mixture adjusted to the reaction of 7.4. It would be easy to make up such a mixture into which one might pour 100 times as much HCl of the strength used above, before the acidity would rise to that of distilled water 7.0 on our H ion scale. Into this same mixture we could pour a hundred times the fatal 2 drops of alkali before the alkalinity would reach the danger point of 7.8. The blood has such an effective buffer value that we may pour many c.c. of 3.6% HCl into a liter of it before its acidity rises to that of distilled water.

Into the blood we pour each day something like 900 liters of CO_2, together with 20 to 100 c.c. of normal acids like H_2SO_4 and H_3PO_4. No buffer system however perfect could long prevent acidity under such conditions, were there no way of getting rid of the acids. The eliminative system, lungs, kidneys, and skin must therefore be intact and functioning or the blood and cells of the organism will very soon grow acid and perish in spite of its buffer system. The buffers of the blood constitute the first line of defense; the lungs and kidneys, and skin and intestinal tract the second supporting line, and the tissues themselves the final reserves.

Because our buffer solution will take up acid or alkali in considerable amount without itself becoming noticeably more acid or alkaline, it must not be assumed that it has not been profoundly altered. So long as the amount of acid or alkali poured into it does not exceed some definite figure it maintains its normal reaction of 7.3 to 7.5. But the shift in the buffer factors incident to taking care of acid may cause quite profound changes. Some of these we know fairly well today, as a result of recent work in this field.

Blood in the capillaries of an active tissue is receiving CO_2. The ratio of CO_2 to $BHCO_3$ is on the increase, which means a reaction *tending* to grow acid. But the NaCl present dissociates, its Na ions form more $NaHCO_3$, while the Cl ion, or HCl, diffuses into the red cells and combines there with haemoglobin as a haemoglobin hydrochloride. Now haemoglobin in acid combination can bind less O than in alkali combination. It therefore dissociates some of its oxygen as the HCl enters the corpuscle, liberating it easily therefore in just the region where it is most required, where combustion is proceeding rapidly, oxygen being used up, and CO_2 produced. At the same time the ratio of acid phosphates to basic phosphates shifts in the acid direction (but without turning acid) and Na and K ions are made available for the production of more $BHCO_3$. Furthermore the plasma proteins, which exist in the blood as metal proteins, give up some of their Na ions to the CO_2 and still more $NaHCO_3$ results. Thus in the capillaries we find a mobilization of metallic ions, chiefly Na and K, in proportion to the CO_2 diffusing in, which keeps the ratio of CO_2 to $BHCO_3$ a constant one; while at the same time oxygen is freely dissociated from the oxyhaemoglobin of the corpuscles, and diffuses into the tissues. This blood is now venous. It passes to the lungs where in close proximity to the outside air and its low CO_2 tension, the excess CO_2 blows off. As it blows off, Na ions are set free again and the reaction of the blood *tends* toward alkalinity. But the excess Na ions recombine with plasma proteins, and with the acid phosphates, while the easily dissociable Cl leaves the red corpuscle to reform NaCl. At this point then we have haemoglobin particularly available for combination with oxygen, in contact with an atmosphere rich in O, and oxyhaemoglobin is again produced. The blood is now arterial and the cycle begins again.

While this cycle is in process, acid phosphate is being excreted through the kidney together with acid sulfates, from the burning of S contained in the protein, and the acid salts of other unburned organic acids if any exist in the blood. The kidney thus excretes more acid than alkaline components, conserving to the body its necessary bases.

There is furthermore a reservoir of basic ions in the tissues themselves, and these diffuse out into blood and lymph the instant the relative proportions of materials in these fluids differ from the cells.

Still another active agent in blocking an acidotic change is ammonia. Ammonia is normally produced in the tissues incident to the combustion of the amino-acids coming in from the intestinal

digestion of food proteins. The first step in this combustion is deaminization—the knocking off of the amino group as NH_3. The ammonia at once unites with CO_2 to form ammonium carbonate or bicarbonate and particularly in the liver this is changed to the neutral, harmless compound urea. Not all the NH_3 however is converted to urea. A certain fraction of it is regularly diverted to partially neutralize the stronger acids normally produced in life, H_2SO_4, H_3PO_4, and the abnormal organic acids which may appear—Beta oxybutyric and diacetic acids, etc. About 90% of the N excreted in the urine is urea nitrogen; about 3% as ammonium salts. If however there is any uncompensated shift in the buffer factors toward an acidotic condition, more of the ammonia is diverted to neutralize or offset the shift and is excreted as ammonium-acid-salts, while urea correspondingly diminishes. Incident to an acidotic change in the buffer system ammonia N may rise to 11% while urea drops to 60%. In the severe acidoses of diabetes the ratio may be much higher than this.

In the tissues themselves we probably have quite as complicated an acid-base mechanism as in the blood, but we know less about it. We do know however that where the acidotic tendency of a cell, or a tissue, or the body as a whole, is not completely compensated by the buffer system in circulation and the organs of acid excretion, the tissues mobilize the final reserves to combat this tendency, and in so doing may make enormous material sacrifices. The tissues constitute the last line of defense the body has against acidosis. The proteins in the cell are protein salts of the alkali metals. Any increased production of acid within the cell—even if it is only CO_2 in excess of what can diffuse out and be fixed in the blood stream—will tend to shift the phosphate mixture in the cell from basic to acid phosphate, and also to rob the cell proteins of their basic elements Na, K. If the process goes far enough the buffer capacity of the cell reaches its limits, and the reaction tends toward increasing acidity. The free proteins now digest under the action of the autolytic enzymes and amino-acids result as the proteins disappear. These amino-acids in turn furnish NH_3 to neutralize the acidity. The cells in the meantime are of course growing smaller. In a generalized acidotic condition, as in starvation, fever, severe acute diabetes, anaesthesia, etc., there is an increased NH_3-urea ratio, and the NH_3 as well as the fuel may be all derived from autolyzing tissues.

Thus we have the wastage typical of prolonged conditions of this sort. As is to be expected, it is costly to throw in this last line of defense to maintain the acid-base balance of the body. Some organs like the liver, can lose heavily and not suffer seriously, returning to normal when the emergency is over. The muscles may rather slowly mobilize considerable protein reserve, but with it goes most of the contractile power of the muscle tissue as well. The excessive weakness following a few days of some acute infective process with high fever and loss of weight, is in part at least due to this mobilization of the available contractile protein of the muscles. The brain contributes little without loss of consciousness, which goes on rapidly to irreparable damage, unless the situation improves. Indeed when the acid-base balance is so far upset toward the acid side, as to reach the condition of coma, the factors of safety have just about been exhausted, the eliminative or the buffer system has broken down and dissolution is imminent. Only some strenuous and sudden change in the mechanism can reestablish the normal balance.

From this sketch of our present understanding of the mechanism which safeguards us from the acids we produce, it must be evident that the important point is to discover early any shifting of the acid-base equilibrium in the direction of acidity.

The severe acidoses are diagnosed easily enough when the acetone bodies appear in the urine to indicate that condition. But we have not yet the simple satisfactory single test which shows the acidotic tendency well in advance of the severe or critical condition. I am confident we shall soon have such a test and that it will open up this field to the clinician and lead to great strides in advance in both diagnosis and therapy. The journals are full of contributions in this field, which shows that chemists and clinicians both are focusing their attention on it, and the problem will be solved. In the meantime there are a number of methods which give some help.

A study of the acid-NH_3-urea ratios in the urine is probably one of the best guides we have today in detecting an aciodotic tendency. Urea and ammonia may both be determined rapidly and accurately. It is not however reliable in all cases.

The method of Van Slyke is to determine the alkali reserve of blood, that is, the bicarbonate content. Blood is drawn from a vein, saturated with CO_2 of average alveolar concentration and then introduced into the Van Slyke apparatus, where the CO_2 is liberated and measured. This gives very exact information concerning the amount of $NaHCO_3$ in the blood. But this one factor alone is not sufficient to inform us definitely of what the situation is in the buffer system.

Information on this same quantity may also be obtained by securing alveolar air by a simple procedure and bubbling it into a phosphate buffer mixture containing an indicator. The concentration of CO_2 in the alveolar air will determine the acidity of the mixture through which it is passed, and the indicator is matched against a standard series of color tubes made up of definite H ion values. Here again, while the information may be valuable, it is incomplete and alone difficult of interpretation.

Still another method in use, is to determine the alkali tolerance of an individual. This has much to recommend it. Bicarbonate is fed in 5 gm. doses at intervals of 30 minutes till the urine becomes neutral. The amount of bicarbonate required to reach this point is indicative of the degree to which the bases of the body have been depleted. While this method appears reliable in establishing the *absence* of acidosis it is not always considered so when acidosis is present. This is because in acidosis the ability of the kidney to excrete alkali is apparently impaired.

Two methods are in use for determining the H ion concentration of the blood directly. In the method of Rowntree this is determined by an indicator. The method is fairly accurate, and gives information as to whether the acidotic shift has gone so far as to alter the H ion concentration of the blood. This is of course of the greatest importance, but it discloses the advanced rather than the early condition.

The most accurate method is by the use of the Potentiometer. The apparatus however is complicated, delicate in its adjustments, and requires a high degree of skill and training to operate. It can hardly be expected to take its place in many laboratories, and in its present form is hardly available for clinical use except in extraordinarily well equipped and manned institutions for research. So far, the results of the highly accurate figures obtained by this instrument establish more firmly the fact that the H ion concentration of the blood is wonderfully constant, and that an acidotic shift in equilibrium may proceed a long way before any significant change of H ion results.

Another notable advance has been made during this decade in our knowledge of metabolic rate and the light which it may throw on certain metabolic disturbances. Basal metabolism may be defined as the metabolism of the human engine when running idle. It is measured by the O used by the body in a given period of time. The developments in this field for the clinician are the outgrowth and culmination of researches carried on by a host of students of metabolism—Voit, Rubner, Atwater, Benedict, Lusk, and Dubois, are some of the names most associated with this work. It has been a gigantic task. It has gone on for a generation or more, and only recently have the results of the complicated calorimeter-chamber studies of Benedict and others made possible the simple bedside technique which is today becoming so rapidly popular in well equipped hospitals and clinics. Because of this popularity and the publicity the method is getting in the journals, the fundamentals of the technique deserve a more detailed description. The apparatus—and there are several types in the field—depends on the accurate determination of oxygen consumed by a patient who is lying at ease, making no muscular effort apart from respiration and circulation, whose digestive tract is at rest, and whose skeletal muscles have been inactive for a half an hour or more before the test. Under such conditions of perfect quiet the oxygen consumption shows the pace at which fuel is being consumed in the body. If we know in addition the type of fuel which the machine is burning—for instance, carbohydrate, protein, or fat,—we may quickly calculate the calories of heat actually developed in the machine from the amount of oxygen consumed. But the fuel mixture we *can* determine if we also weigh the CO_2 and get the ratio of CO_2 produced to O consumed, the "respiratory quotient." Carbohydrate, protein, and fat each have a definite ratio of CO_2 produced, to O consumed, so that from Benedict's and Atwater's fundamental work we may determine quite exactly the character of the fuel mixture being burned. Knowing the kind of fuel mixture, the amount of oxygen consumed can liberate from it a perfectly

definite amount of energy as heat. And so we arrive at a figure which tells us the heat units being produced, minute by minute, in the human engine under observation. But we find that 2 perfectly normal individuals, under identical conditions, produce very different amounts of heat, for this amount is related to age, to sex, to weight, height, and contour, or to surface area. Gram for gram the mouse metabolizes at an enormously greater rate than the elephant. But if we relate the heat produced to units of surface of the two animals we find that they produce energy at just about the same pace. The mouse has a great deal more surface exposed per gram of weight than has the elephant. And so through the most elaborate correlation of data requiring years to secure, the tables of DuBois or the tables of Benedict were prepared by which we can relate the actual energy produced by an individual to his age, sex, and area. We thus finally arrive at a figure which appears to be a genuine constant in metabolism—and basal metabolism is expressed in calories of heat produced per unit of surface area—calories per hour per sq. meter. The basal metabolism of any normal individual may be predicted then with surprising precision for either sex and for any age if we know his height and weight. In certain conditions wide variations from the normal metabolism are found—particularly in hyperthyroidism. In the classical case, the clinical picture of abnormally active metabolism is regularly born out by the markedly increased metabolic rate. Also in some border line conditions where typical symptoms are not so clear, the metabolic rate appears to confirm the suspicion of heightened thyroid secretion. But again it must be borne in mind that the basal metabolic rate is not determined wholly by thyroid activity. There are undoubtedly other factors which play a part, perhaps a large number whose nature we can only guess at today, and which may so alter the metabolic rate as to either obscure excessive hyperthyroidism or to stimulate it by giving a heightened basal rate. The basal metabolism figures often appear equivocal. They sometimes fail to substantiate what the other symptoms suggest, they sometimes may seem to show a condition for which the thyroid is only partially responsible. The present enthusiasm for making basal metabolisms is going to lead to many mistakes, but it is also going to lead to the collection of quantities of valuable data which in time will be correlated and interpreted, and in time will show us just how widely applicable, and just how reliable this new tool for diagnosis will prove to be.

Like any complicated test for use in the clinic, it creates a demand for less complicated apparatus and technique. The demand for simplification often results in sacrifice of accuracy, and I question whether the results obtained from the measurement of oxygen only—as it is done in the most simple type of apparatus—will stand the test of time. In such cases no respiratory quotient is obtained, an average figure therefore has been chosen which represents the heat produced by the burning of an average mixture of proteins, carbohydrate and fats. Now it makes a considerable difference whether at the time the test is made pure fat is being consumed as fuel, or pure glucose, or what the proportion of the two is. Our own experience leads me to the conclusion that a patient may be burning one mixture now, and half an hour later when a second test is run, he may be burning quite a different mixture. Such differences give a range from 0.7 to 1.00—that is a possible variation of 30%, when .86 is taken as the average figure, an error of 10 to 15%, up or down is possible right there. Add to that the many other errors of the process and it makes the total error in any one set of determinations quite large indeed. DuBois and Benedict allow 10% deviation from the normal expected figure. with the more accurate apparatus. Where O alone is determined the possible error must be much larger. It is probable therefore that the sacrifice of accuracy made in the less complicated procedures may very likely be sufficient to make their use of little value except in detecting extreme conditions. They will probably have little use in the painstaking studies of metabolism that will be carried on in research institutions. On the other hand it may appear that the recognition of extremely high or low metabolic rates is all that the clinic or physician will demand as confirmation of the other clinical evidence. And in that case the apparatus may be made still simpler and more inexpensive.

In concluding this brief resumé of some of the recent advances in chemistry, I should like to say a word about the relation of the laboratory to the physician. I feel that in many cases it stands at something either more or less than its real value.

Many times it is undervalued. Quite as often it is given an importance which it does not possess. Too often there is danger that the laboratory results will be substituted for clinical diagnostic ability. The laboratory findings cannot take the place of the keen observation, the experience, the almost intuitive recognition of signs,—invisible to the layman—which is the equipment of the real diagnostician. To such a one the laboratory is an aid in two ways. First and by far the more important is the understanding which the results of laboratory research give him of the complexities of the human mechanism. Second, by placing at his disposal methods for securing information in addition to that secured by eye, ear, and touch. He uses the laboratory as he uses his stethescope, or his blood pressure apparatus, or his opthalmascope, without attaching any undue importance to the results, nor believing that it can apply in all sorts of cases. If the laboratory results are equivocal—and 9 times out of 10 they are—the clinician proceeds on the evidence acquired in other ways.

The number of sharp tests like sugar or albumin in urine are few indeed when we consider the number of years chemists have been at work on medical problems. But on the other hand, while only a few specific unequivocal reactions have been forthcoming, useful enough to become part of the everyday routine in the physician's office—think of the tremendous advances in general knowledge of the human machine and its reactions, its composition, its intermediary metabolic processes, that have been built up in that same period.

These advances should be recognized as the real aids which the laboratory side of medicine has made and continues to make to its practice.

GIARDIASIS.

Three cases are reported by Caroline McGill, Butte, Mont. (*Journal A. M. A.*, Jan. 21, 1922). She asserts that giardiasis is a frequent cause of severe diarrhea, with much impairment of general health. In place of diarrhea, there may be constipation. Practically all patients have abdominal pain, which at times is very severe. No treatment yet suggested has been successful in ridding the bowel of *Giardia*. *Giardia* may invade the gallbladder, and when there, and in large numbers in the duodenum, may give symptoms resembling duodenal ulcer.

LUMINAL IN THE TREATMENT OF EPILEPSY.*

BY F. D. MURPHY, M. D.,

MILWAUKEE

Epilepsy has been the subject of medical investigation since the earliest ages of medicine. The seizures characteristic of the disease have been ascribed to many causes, successively from demoniacal possession, falling stars, the vapors within the body down to our present day cerebral excitation theory.

The treatment of Morbus Sacer, in the past, has been as changeable as has been the variously attributed causes. The unfortunate victims have run the gauntlet of "cures" from the purifaction of the ancient priest down to the present day treatment by drugs.

Hippocrates took the first step forward in this matter, when he denied the divine origin of the disease. He attributed the disease to the dyscrasias of the four humors of the body and advised general hygienic measures as treatment. He laid great stress on proper diet, care of the bowels and admonished patients against sexual excitation, unpleasant thoughts, fears and circumstances which may produce ill temper. This state of affairs practically continued until 1857, when Laycock introduced bromides. Of course, in the meantime, many fads and "cures" were tried, because the healer of those days, as of today, grasped at any measure which promised relief to those afflicted.

The bromides have been used since 1857 and are being used today, but all know the untoward effects of the bromides in treatment of epilepsy, therefore the search for a better treatment continued.

Luminal has been the latest addition to the long list of methods used to treat epilepsy. Luminal was originally a German product and first used by the Germans as a hypnotic, later to control epileptic seizures. Luminal is phenyl-ethyl barbituric acid It is closely allied to veronal, veronal being di-ethyl barbituric acid. The Germans thought by the phenyl substitution they could produce a better soporific. Luminal is practically insoluble in water, but sodium luminal, a

*From the Medical Clinic of the Milwaukee County Hospital.

soluble derivative of luminal, is readily soluble in hot water or hot milk and it is sometimes used in this manner. Sodium luminal is put on the market in one and one half grain tablets. It is eliminated from the body by the kidneys and has been found in the urine within three hours after ingestion. There have been no symptoms of renal irritations reported in the literature from the use of this drug.

It is not the intention of this paper to review the results obtained from the use of luminal by all the men who have used it, but to summarize the findings of a few men who have used the drug to treat a large number of epileptics over a considerable period of time.

A. Hauptman (1) used luminal to treat a number of cases of epilepsy which previously had been receiving large doses of bromides. He states that luminal exerts a favorable influence on epilepsy by reducing the number and severity of the attacks and that it is especially useful in those very severe cases no longer controllable by the larger doses of bromides. In cases of moderate severity, he recommended two to three grains daily, while in more severe cases five grains need not be exceeded. In this article he says that after months of daily administration, no injurious by-effects have been observed and no cumulative action has developed.

F. X. Dercum (2) was the first man in America to report results with luminal in epilepsy. He states that, after several years' experience in a number of instances, the convulsive seizures have been abolished, in many cases the severity and number of attacks have been markedly reduced. He recommends that small doses of bromides, preferably the sodium salt be used three times a day and that 1½ grains of luminal be administred on retiring, later he says the bromides may be discontinued. Dercum emphasizes the fact that luminal in doses large enough to control the convulsion has no deleterious effects. He also observed that cases of idiopathic epilepsy responded most readily to the treatment.

J. Grinker (3) presented his results with luminal in the treatment of 100 cases. His experience covers a period of 8 years. He found that luminal in small doses, from 1½ to 2 grains once or twice daily, would control the convulsion of epilepsy in some cases and diminish the severity and number in others. Larger doses may be given, especially at the beginning of the treatment, after the sudden withdrawal of bromides. Grinker observed no harmful effects after long continued use of luminal, and he believes that luminal acts best when given without any bromides.

H. M. Watkins (4) observed the action of luminal in 22 cases during February, March and April, 1920. He administered the drug in 1½ grain doses twice daily. The symptoms noted following its use were sleepiness, drowsiness, later dizziness, depression, confusion, hallucinations and delusions; practically all the bad effects of the bromides except the rash. In two cases it was necessary to withdraw the drug entirely after one month's trial, because of the development of severe mental symptoms. Watkins brings out the idea that concomitant with the discontinuance of luminal, the attacks increase in number and severity. In conclusion, he states that the total number of convulsions in all classes of cases were reduced 66 percent, and although a small proportion of patients have an increased number of convulsions during its use, luminal serves a purpose in the therapeutics of epilepsy.

Luminal has given Sands (5) most unusual results in the treatment of 86 cases of epilepsy. The dose used by him was three-fourths of a grain three times a day, but each case was carefully studied before definite dosage was given.

The first improvement was a decided decrease in the number of seizures. The attacks became definitely less severe and of shorter duration. The physical and mental conditions of the patients became markedly better. He also noted a decrease in the number of injuries received during seizures, and in the number of altercations with other patients. Concomitant with the discontinuance of the drug, he observed that the seizures returned with greater intensity. No after effects and no cumulative action of the drug were noticed. Because of the fact that the manner in which the drug acts is not understood, Sands believes that the drug should be used with great care and by trained men only.

C. C. Kirk (6) reviews his results in 200 cases treated by luminal. He used the drug in 1½ grain doses at bedtime. After eight months' trial, he noted the following—that there were 61 patients who had had no convulsions since the treatment was begun; 106 patients that had less than five convulsions while under treatment; 45 patients who had more than five convulsions. He

maintained that the physical as well as mental condition of all the patients had improved and that there are no deleterious effects and that many cases changed from Grand Mal to Petit Mal. Finally, he says that luminal is without doubt the most efficacious and least harmful of all the drugs that have been used in the treatment of epilepsy.

In July, 1920, it was decided to give luminal a trial at the Milwaukee County Hospital and Infirmary. Our interest in the epileptics had been stimulated because of the facts that the attendants at the infirmary had complained of the annoyance which this class of patients caused, also because a number of the epileptics were receiving as high as 200 or more grains of bromides daily. The method we concluded to use was the one suggested by Dercum, that is sodium bromide grains fifteen three times daily after meals and luminal 1½ grain, on retiring.

In July, five of the patients who had been having several severe attacks weekly for many years, were placed on the treatment noted above. These cases were observed closely for three months and the results were that two of the cases had no attacks following the first week of treatment, one case had three mild attacks during the three months, and one case felt as if he were going to have an attack numerous times, but became partially unconscious with no seizure following.

The results with these few cases were so satisfactory that every case of epilepsy in the infirmary, also every case of epilepsy entering the hospital, and all the cases at the County Hospital for Mental Diseases were put on luminal treatment. We were not fortunate enough to be able to follow closely all of these cases but we were successful in observing about sixty-three cases for almost one year. The outcome of our experience was so gratifying that we feel we should note it in order to stimulate further investigation and render those distressed from the hands of those practicing various cults.

The majority of cases treated were over thirty-two years of age and had been having attacks as long as they could remember. Our observations were very little different from the observations of others, also the results at each of three institutions were practically similar. That is, every case was a problem in himself and the dose would in certain patients have to be changed to suit the case. Some patients were relieved of the attacks entirely and at once, while others were apparently not affected at first but gradually the attacks began to decrease in number and severity until at last they ceased altogether, still others never became free from the seizures. But we can say that few cases were treated which were not benefited to some extent by luminal.

Time would not permit us to give a detailed history of the reaction and progress of each case. However, we wish to add to the records a few cases illustrating the efficacy of this drug in treatment of epilepsy.

CASES.

Case No. 1. C. O. Age thirty eight—female—single.

Has had attacks regularly five times a month for eighteen years and about four times a year for the ten years previous to that time. She was very absent-minded and stupid before she was treated with luminal. This patient was started on luminal in July, 1920. During the last week in July, 1920, she had two mild attacks, also one mild attack during the second week of September, 1920, and from that time on to the present date, July, 1921, she has had no attacks. The patient became physically and mentally improved.

This is an illustration of a case in which luminal has practically arrested the epileptic convulsions.

Case No. 2. O. G.—Age thirty-two—female—single.

Has had attacks since she was in graded school. She had about two attacks a month until her monthly periods came on, then she would have about three attacks during the period of menstruation. This woman was placed under luminal treatment in July, 1920. She had one mild attack October 28, 1920, one on February 10, 1921, and the last one on May 16, 1921. The attacks which came on after the starting of luminal treatment were during her menstrual periods.

This is an example of a case in which luminal has not entirely controlled the attacks, but over which it has exerted a favorable influence.

Case No. 3. J. D.,—Age thirty-five—female—single.

Had first attack at age of nine, a few attacks a month until twenty years of age. From the age

of twenty on, she never had less than three attacks a week, sometimes as many as four attacks a day. Luminal treatment was started in July, 1920, and to date, July, 1921, she has had no attacks.

This case serves to illustrate one in which luminal has apparently fully controlled the convulsions.

Case No. 4. P. F. Age twenty-nine—female—single.

This patient had her first attack at the age of twelve and she has been having one or two attacks a month since that time except during menstruation, when she has had as many as four in one day. This patient began to take luminal in September, 1920. On November 29th, 1920, she had one attack; and on January 14th, 1921, another. Up to the present date, July 1921, she has had but the two attacks.

In this case, luminal did not wholly abolish the attacks, but certainly had marked beneficial effects.

Case No. 6. M. G. Age thirty-nine—female—single.

This man had his first attack when he was a baby, and has had two or three a week ever since that time. He has sustained many injuries received during his severe attacks. He was very stupid and would often get lost when he was allowed out on the county grounds.

Luminal was first administered in July, 1920, He never had an attack after the commencement of the luminal treatment, except during March, 1921, when he took it on himself to stop using the tablets; within a week he had a severe attack; he again started to use luminal and has had no attack from that time to the present date. He also became more alert mentally and has markedly improved physically.

This case illustrates one in which luminal completely controlled the seizures.

Case No. 6. M. G. Age Thirty-one—female—single.

Has had epilepsy since she was eleven years old. She has been having about four attacks a month for the past ten years. Previous to that time she had them less often, about once a month. This patient was put on luminal in September, 1920, and for a few months the attacks decreased in number and severity, but later they came as regularly and severely as they had come prior to the luminal administration.

This is an illustration of a case which did not respond to luminal treatment.

As has been said previously, all cases do not react alike to this drug, in some cases the outcome seemed a little short of miraculous, while in others the results were that the patient would have one mild attack a month, when previously he would have three attacks weekly. Of all the cases treated, there were few that were not greatly benefited. Whether the cases which have been relieved entirely from convulsions will remain free from attacks, time only will tell.

In conclusion, we can say after one year's experience, that luminal is deserving of a thorough trial in every case of epilepsy.

1. A. Hauptman; Munchen Med. Wchnschr. vol. 54, page 1907; Aug. 1912.

2. F. X. Dercum; Therapeutic Gazette, Vol. 43, page 609; Sept. 1919.

3. J. Grinker; J. A. M. A., Vol. 75, page 588; Aug. 28, 1920.

4. H. M. Watkins; New York Med. Journal, Vol. 112, page 891; Dec. 4, 1920.

5. I. J. Sands; Arch. Neur. & Psychiat. Vol. 5, page 305; Mar. 1921.

6. C. C. Kirk; Am. Journal of Insanity, Vol. 77, page 559; Apr. 1921.

PURPURA FULMINAS DURING CONVALESCENCE FROM SCARLET FEVER.

Guthrie McConnell and Harry L. Weaver, Cleveland (*Journal A. M. A.*, Jan. 21, 1922), report the case of a girl, age 6, in whom, the fifteenth day after the first symptoms of an attack of scarlet fever and the seventh or eighth day of normal temperature, the temperature went up suddenly to 40 C. (104 F.). The same day the patient's left foot became discolored; further ecchymoses appeared on the body in the course of about forty-eight hours; the urine and stools became bloody, and the fourth day after the first ecchymotic area was seen, the patient died. The postmortem examination revealed, in addition to the skin ecchymoses, hemorrhages in the bladder, intestine and brain. Miscroscopic examination revealed that the discoloration was not due to gangrene but to interstitial hemorrhages following infectious thrombosis.

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EDITORIALS

A PERSONAL QUESTION.

WHAT have YOU done for our society during the past year besides paying your dues? Have you contributed to the scientific part of any of the meetings? Have you discussed the papers or talks given by others? Have you assisted by your presence at the meetings?

You know very well that a society cannot be conducted successfully if its members do nothing but pay their annual dues. Neither can the officers, of themselves, make the organization a success.

MEDICAL ORGANIZATION.

DR. W. W. GRAVES, President of the St. Louis Medical Society, in a recent address said:

"A medical society means to a physician opportunities for continuous growth and greater usefulness to his fellowmen. It is a forum where the best medical thought, opinion and achievement can find expression and discussion. It supplies its members with a form of post-gradnate instruction that is indispensable to the family physician and to the ultra-specialist alike.

"The American Medical Association with the support of its component county and city societies and its state associations, has done more to raise the standards of education in our medical schools, more to further post-graduate medical work, more to promote the aims and ideals of physicians everywhere, more to awaken medical and public interest in public health matters, more to further human health and, consequently, human efficiency, than any other single agency in human history."

"MEDICAL ADVISORY COMMITTEE" OF AVON LAKE.

COUNTY medical societies throughout the United States have been repeatedly circularized during the past few months by the "Medical Advisory Committee" of Avon Lake, Ohio. These circulars and other printed matter denounce certain medico-social conditions which practically every member of the profession agrees are wrong and should be corrected. This literature features these conditions and others in a yellow journalistic manner with much exaggeration and little proof.

It places the blame for all medical and social evils on the present officers, trustees and councils of the American Medical Association. It charges them with sin and crime which, if proven, would send them to the damnation-bow-wows. It accuses the majority of the House of Delegates of the A. M. A. with being "subsidized" and warns against a continuance of "oligarchial" rule. It

kindly furnishes each county society with a ready-made set of printed resolutions which call for instructing delegates to oust the old leadership and follow the new.

That there are serious undercurrents which are affecting the practice of medicine no one can deny. It may be that we must exert every ounce of strength to prevent the socialization of medicine. The developments of the past few years are not pleasant to contemplate. It may be that we have been too individualistic and that our organizations have failed to keep far in advance of the popular medical mind in anticipating and preventing the post-war social evolution as it affects the healing art. The profession has never been forced to face more serious problems. This is, however, a time for cool heads and not for hysteria. It is a time which calls for a united profession, not a divided one.

As to the "Medical Advisory Committee" of Avon Lake—it is a self-appointed committee which has undertaken to save the profession through a considerable financial outlay and for reasons best known to itself. It is not, as it would appear, a part of or in any way connected with the organized profession of Ohio. The following letters from the President and Council of the Ohio State Medical Association are a disavowal of any responsibility for the propaganda of this "committee"—

To Presidents and Secretaries of County Medical Societies:

You have undoubtedly received a circular communication accompanied by a form resolution, from the "Medical Advisory Committee" signed by "F. H. McMechan, M. D., Secretary."

Due to the fact that Dr. McMechan is employed as medical editor of *The Ohio State Medical Journal*, there may be some misunderstanding regarding the status of the "Medical Advisory Committee," there being no committee of that name within the State Association. Inasmuch as the origin, personnel, activities, functions and objects of the "Medical Advisory Committee" have not been made known, and in view of the fact that the statements set forth in the communication and resolution are in the nature of general conclusions rather than information or positive facts, I, as president of the Ohio State Medical Association, respectfully suggest that action on the resolution be deferred until inquiry and investigation have been made.

I am quite sure that the members of Council of the State Association, which meets in Columbus in the near future, will give careful thought and study to the propositions set forth in the communication of the "Medical Advisory Committee," after which you will be advised of findings and action of the Council.

You may be assured that the officers, Council and committees of the Ohio State Medical Association are keenly alert to existing conditions and definite problems with which the medical profession is confronted, and that those who have been chosen by you to formulate policies, promulgate activities and to investigate such conditions are conscientiously and constantly striving for the advancement of the profession and for a proper recognition for it by the public and the state.

You may be assured that the importance of any and all questions affecting medical practice is not being neglected or overlooked by the officers, members of Council and the committees of the State Association.

Yours sincerely and fraternally,

WELLS TEACHNOR,
President.

December 30, 1921.

To Presidents and Secretaries of County Medical Societies and Academies of Medicine:

The Council of the Ohio State Medical Association at its meeting in Columbus on January 8, endorsed and approved the contents and policy of the communication which you received from Dr. Wells Teachnor, President of the Ohio State Medical Association under date of December 30, 1921, regarding the activities and propaganda emanating from the so-called "Medical Advisory Committee."

After careful consideration and thorough discussion, the Council wishes to emphasize to you and through you, to the entire membership of the Ohio State Medical Association, that individually and collectively, we know that the officials and committees of the Ohio State Medical Association

are working for and serving the best interest, of the profession in Ohio; that whatever problems exist, with relation to the policies and personnel of the leadership in the A. M. A., with relation to medical education, foundation subsidies, the interrelation of the state medical societies, questions of state medicine, legislation, medico-political situations, cults and other propositions which are set forth in the circular recently issued by the "Medical Advisory Committee" are being and have been given conscientious, consistent attention by your Council, the Officers and committees of your State Association.

We know the solution of any and all such problems can best be arrived at *through the proper organization channels,* and that you may be assured of all possible interest and attention to these problems by your Council, officers and committees, and by your delegates to the Ohio State Medical Association and to the A. M. A. to the end that your ideas and wishes, and those of the great majority of our membership are faithfully carried out.

Communications from the "Medical Advisory Committee" represent the opinions and expressions of *individuals.* Statements on behalf of that group signed by F. H. McMechan, M. D., should be construed only as *individual expressions* and with no authority or official sanction from the Ohio State Medical Association, under which Dr. McMechan is employed as Medical Editor of *The Journal* of the Association.

This letter is a disavowal of any official responsibilities for the utterances of Dr. McMechan.

Very sincerely,

Council of the Ohio State Medical Association,

WELLS TEACHNOR, M. D., President.

S. J. GOODMAN, M. D., Sec'y of Council

OUR ADVERTISERS.

IN asking for increased patronage of the advertising section of the Journal of the Michigan State Medical Society, the editor calls attention to the fact that the expense of publication has increased over four hundred per cent during the past five years, with little chance of any marked decrease in the cost for some time to come. The necessity for increased incomes in order to maintain or improve the present standard of medical periodicals is the excuse for asking the readers of state journals to increase advertising income by patronizing the advertisers whenever consistent to do so, and thus making the advertisers feel that they are receiving adequate returns for the money expended. What is true concerning the publication of the Michigan State Journal is true of the publication of every other state journal, but the difficulties may be met by the co-operation of everyone interested in the success of the state medical journals.

ABSTRACT OF AN EDITORIAL IN THE CHESTER COUNTY MEDICAL REPORTER.

TO paraphrase an old proverb—a doctor may be known by the office he keeps. The first requisite of a doctor's office is that it shall be equipped with everything that he can legitimately use in the practice of his profession. The equipment, of course, depends on the sort of work he does. The specialist has to have more apparatus of various kinds than a man in general practice. We have seen some offices so filled up with machinery that there was very little room for the desk, and we have noticed that the offices of the best doctors have very little of this sort of thing. A little apparatus intelligently used is much better than a great deal that is placed in the office to impress the minds of patients. A doctor's office, if he expects to attract the best class of patients, must be clean, and, if possible, in good order. Dirt and disorder are often associated but not always. The former is much more objectionable.

Should a doctor's diploma and his license from the State Board of Examiners be displayed in his office? We can imagine circumstances in which this is proper but in this neighborhood these are unnecessary and an array of such documents suggests vain glory. There will be plenty of medical books in the office of an up-to-date doctor. A few good books well read are of more use than an extensive collection that remains on the shelves.

A doctor's office is a place of business and should look like one. Luxuriously upholstered chairs, etc., are out of place. Pictures of storks and skulls and the like supplied as advertisements by drug stores are very objectionable. The same may be said of photographs of operations in which

the doctor appears dressed in an operating gown and gloves and wielding a scalpel or saw. If there must be pictures in the office let them be good ones, preferably engravings, of men famous in medicine or allied sciences. Whatever may be said of the office we think that the waiting room should have in it as little to suggest medical procedure as possible. Here books, pictures, magazines and other objects that will interest the patient and divert his mind are in place.

All physicians' offices should be equipped to do simple laboratory tests. How much of the work should be done by the physician himself or under his immediate direction will depend on circumstances. In only exceptional cases, we think, should a physician attempt the more elaborate laboratory procedures in his office.

All of these things, however, are only accessories; it is the skill, the earnestness and the personality of the doctor that produces results.

AS OTHERS SEE US.

PHYSICIANS AS SAFE CHAUFFEURS.

"During the past eight months, physicians who have had their automobile insurance written in the Society's office have had all their losses paid with less than five per cent of the amount paid for their insurance. On an annual basis this will cost about eight per cent of the premiums demanded. The average for the general public is only thirty-eight per cent. These figures show that physicians form an exceptionally good class as to risk. Our figures are based on a comparatively small number of risks. They are fortified, however, by a rather careful examination of the records in the city of Richmond with more than three hundred physicians using automobiles. Reducing all the rates and percentages to dollars and cents, the actual losses caused by physicians while driving automobiles could be covered by an annual cost of five dollars per annum for city physicians and about half that for those in small towns and rural districts. The reason for this is quite clear. Physicians form an exceptionally intelligent class with the well-trained mind's attitude towards the welfare of their fellow men. In addition their life work is the protection and lengthening of human life, and they govern all their activities with this object in view. It is their business to protect life and they are regardful of it when driving automobiles. Assuming that half the physicians in the United States carry liability protection, the failure of the companies to appreciate the facts as set forth here costs these men about one and a half million dollars annually more than it should."—Lit. Digest.

THE JOURNAL CLINIC

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The University of Wisconsin.

AN INTERESTING CASE OF LUNG DISEASE.

BY A. A. PLEYTE, M. D.,

Wisconsin Anti-Tuberculosis Association.

Social and Statistical History: Male, ex-service man, no history of gassing while in service, single, 31 years of age, white, born in Wis., present occupation, working in a battery station.

Family History: Mother died of heart disease, father L. & W., 9 Bros. L. & W., 1 Bro. died pneumonia. Family history considered negative.

Personal History: Had whooping cough in childhood, operations for tonsilectomy and broken nose in past, pleurisy in 1920, and frequent "colds" in the past few years.

Present Illness: Patient thought he had heart disease and physician's diagnosis in past was plastic pericarditis. *Symptoms at present*—Fatigue, loss of appetite, pain in right chest, cough, expectoration, and palpitation. The onset of disease with the appearance of above symptoms was gradual and insidious, the cough at all times being aggravating.

Physical Examination: Examined in A. M., Temp. 100 F., pulse 96, Ht. 71 in. Wgt. 168 lbs., well nourished, carious teeth, chronic pharyngitis, slight thyroid enlargement (simple goitre), mucous membranes anemic, heart negative at present except rate slightly increased. *Lungs*—Right lung—flaccid atrophied shoulder girdle muscles, lagging with a particularly limited motion 3rd rib up, slightly increased vocal resonance 3rd. rib up anteriorly, impaired resonance 5th. rib and 10 D. S. up, expiration prolonged 3rd. rib and 5 D. S. up; few sibilant, fine and medium moist rales on inspiration following expiration and cough 5th. rib and 9 D. S. up. Left lung—Harsh inspiration thru-out, occasional moist rales following auscultatory cough 4th. to 2nd. rib.

Diagnosis: Presumptive tuberculosis, pulmonary, chronic, active, infiltrative, upper right and apex lower right. Also mixed infection present.

Prognosis: Favorable.

Suggestions to attending Physician: Sputum examinations should be made frequently and repeatedly. It is possible (not probable) that all the chest findings could be due to mixed infections. It is more likely to be this on top of an active tuberculosis. Sanatorium observation and treatment was recommended as best for this patient.

Comments on Above Case.

This patient should have further study to make diagnosis positive. But, while the diagnosis is not absolute there are many cases of similar nature in which, were we to wait for most positive evidence, we would lose much valuable time in treatment. The character of treatment here seems clearly indicated.

While there is no history of the patient being gassed while in the service, the history of working in a battery station is suggestive. This patient was constantly exposed to sulphuric acid fumes. Automobile mechanics frequently suffer from mixed infections in the lungs also. These infections follow in bronchi and lung parenchyma more frequently when preceded by a gas irritant. An old tuberculous focus is often lit up about the same time.

We have a suggestive past personal history insofar as the man has had frequent "Colds" in recent years, and pleurisy in 1920. Probably the majority of pleurisies are of tuberculous origin.

The symptomatology refers itself directly to the chest and is more than suggestive of pulmonary disease.

The temperature and pulse rate in a man working each day would indicate rather mild infection and that the patient has considerable resistance.

The presence of sibilant rales in cases of pure tuberculosis is not usual, and indicates other infection, most often streptococci.

This patient like all others needing medical attention was referred back to his attending physician. If no physician is in attendance, patients are urged to secure medical aid at once. To insure their following our suggestions, the social service department of the Wisconsin Anti-Tuberculosis Association follows up the case in cooperation with the community, Red Cross, or county nurse under whose jurisdiction the patient may come.

ACIDOSIS.

BY HUGH P. GREELEY, M. D.

MADISON.

CASE I. Age 7. Male child. F. H.—Mother has sick headaches. Otherwise well. Father living and well. P. H.—Has escaped all the infectious and contagious diseases. Always a high strung youngster—gets easily tired—eats fast and too much—and never eats vegetables. Meat, potatoes and bread his favorite foods. No milk. Has had repeated attacks like the present. P. I. —Three days ago awoke in the night vomiting severely and with apparently considerable fever. This has persisted since, the boy becoming listless and drowsy, and content to lie quiet. Today water has been retained. Breath sweet, tongue dry and brown. Dull, drowsy, with a temperature of 100. Urine shows marked diacetic test.

CASE II. Age 5. Male child. F. H.—Nervous, hysterical mother. Father professional man, well. P. H.—None of the contagious diseases. Finicky about diet—never has any appetite, rests every day, doesn't play hard, coaxed mentally by parents. Thin, tired. P. I.—Present attack began two days ago, with vomiting at night. Fever followed and boy became dull and his breathing has been punctuated with heavy sighs. Tongue slightly brown and dry. Urine, diacetic acid 3 plus. On third day the breathing was typically hyperpnoeic.

CASE III. Age 11 months. Weight 25 pounds. Has been a fat plump baby ever since birth. Has gained very rapidly during the past summer. Milk very rich in butter. Diet calculated at about 8 per cent fat as only top milk has been used. During the height of the hot weather the child had an acute upset with vomiting, prostration, fever and stupor.

DISCUSSION.

The etiology is still a question. Several factors seem to be of importance, among them, nervous constitution of the child. Often, as in this case, one parent has migraine, or is hysterical. Generally children are easily subject to fatigue and often attacks seem to follow a rather rapidly eaten meal taken on an empty stomach, when tired.

Case III is typical of attacks of acidosis in babies. Generally the fat, overfed babies are more prone to attacks, which seem to be precipitated by hot weather, slight infections of pharnyx or tonsils, teething, etc. The chief factors then are too restricted a diet, a diet too high in fat, and nervous

constitution and easy susceptibility to nervous fatigue.

The diagnosis of cases of acidosis is unsatisfactory. There are no clinical symptoms which distinguish it clearly. The only characterization sign is the hyperpnea which comes when the acidosis is well developed. The acetone reaction in the urine helps only partially as it is apt to be present in any child who is vomiting. The complete picture with history of former attacks generally decides the case. In younger children an infection, often mild in character, precipitates the attacks.

How to prevent these attacks then is a problem which resolves itself into care and training in regard to diet and the avoidance of infections. All children should be early trained to eat all wholesome food and to eat slowly and sparingly when tired. Secondly—avoid nervous and emotional strain. These children should exercise thoroughly but rest frequently and should vegetate and not be mentally stimulated.

Prognosis.—The condition is generally outgrown completely at ten years old and leads to nothing serious.

Treatment.—Five per cent glucose solution by rectum by the drip method and liquid by teaspoon by mouth, if it can be retained. No soda in any form by any method is indicated, though it may be advisable to give soda bicarbonate till the urine is alkaline occasionally between attacks.

UREMIA FOLLOWING GASTRO-ENTEROSTOMY—EIGHT CASES.

BY W. J. TUCKER, M. D.,

ASHLAND.

The cause of vomiting following gastro-enterostomy given in the literature are in the main mechanical; gastric atony from long continued obstruction, inflammatory conditions of the stomach wall, kinking at the duodeno jejunal angle and gastromesenteric ilens have all been reported. We find no reference to renal insufficiency as a possible cause. Eight cases of uremia following gastro-enterostomy for uncomplicated duodenal ulcer of which vomiting was the initial symptom form the basis of a preliminary report.

Vomiting was the initial symptom in all of the cases and was extremely resistent to all forms of local treatment. Patients with one exception were all males; the average age 40, the oldest being 53, and the youngest 28.

The uremic findings were confirmed by clinical, laboratory, and in three instances, by postmortem findings. Four of the eight cases resulted fatally. Blood urea was uniformly high, varying from 93 mg. to 260 mg. for each 100 c.c. The urine findings, that is, albumin in large quantity, casts, and blood cells, were characteristic in every case of an acute exacerbation on a chronic interstitial nephritis.

An exploratory operation performed in 2 cases on the assumption of mechanical basis for the vomiting, following the gastro-enterostomy, revealed no cause, and jejunostomy brought no relief in either case.

CASE 1. A man aged 53, had nothing in his history or physical examination to warrant suspicion of any underlying nephritic condition. The blood pressure previous to operation showed systolic 130, diastolic 70. The urine findings were negative, specific gravity 1028.

The operation was uneventful and convalescence to the thirteenth day uninterrupted. The patient left the hospital on the eleventh day. Two days later he began to vomit. Regurgitation was copious and persistent, although painless, and no food could be kept in the stomach. The usual diagnosis of acute dilatation of the stomach from gastric atony was made; fluid was restricted from the mouth and four to six hourly lavage was instituted.

The condition persisted despite all treatment and the patient became perceptibly worse. A routine urine examination gave the first evidence of the underlying condition. The urine was loaded with albumin, casts, and blood cells. A blood urea test showed 70 mg. in each 100 c.c. Despite all eliminative treatment, the patient developed convulsions, passed into coma, and died on the twenty-seventh day.

Postmortem examination showed an acute parenchymatous nephritis on a chronic interstitial nephritis.

CASE 2. A man aged 39, gave a history and presented clinical findings previous to operation which pointed to a possible interstitial nephritis. He suffered from nycturia, and the urine which contained albumin had a specific gravity of 1006. The systolic blood pressure was 130, the diastolic 96.

For nine days following operation the patient had an uneventful convalescence and was discharged from the hospital. Forty-eight hours later he began to vomit. Lavage and elimination were instituted at once. The urine showed the characteristic changes. The blood urea was 105 mg. for each 100 c. c. Convulsions developed and the patient went rapidly into coma, and died in seventy-two hours.

Postmortem showed an acute on a chronic interstitial nephritis.

CASE 3. A man aged 43, previous to operation showed systolic blood pressure of 118, and diastolic 80. The urinalysis was negative but the patient had had urinary frequency for six months.

This patient did well for eight days following operation, then started to vomit. Lavage did not relieve him. In this case, profiting by our previous experience, the renal condition was given immediate attention. The urine was found to contain albumin 4, and casts 4 on a basis of 1 to 4, and blood cells. The blood urea was the highest in the 6 cases, 260 mg. for each 100 c. c. Vomiting continued for seven days despite all treatment, when a jejunostomy was done. Examination of the stomach revealed no local cause for the condition. The patient passed into convulsions and coma, and died on the twentieth day.

Postmortem showed an acute on a chronic interstitial nephritis.

CASE 4. A man aged 45, had no history nor findings to warrant any suspicion of the condition of the kidneys prior to the operation. He began to vomit on the eighth day following operation and continued until death on the twenty-fifth day.

An exploration was made on the seventeenth day and adhesions were broken up, and again on the twenty-fifth day, when a jejunostomy was done.

The first urea showed 40 mg. for each 100 c. c., the second 93 mg. for each 100 c. c. The urine showed albumin, casts, and blood cells. The patient developed convulsions, passed into coma, and died on the twenty-fifth day. Necropsy was refused.

CASE 5. A man aged 42, who had been discharged from the hospital, began vomiting on the twelfth day following operation. Examination prior to operation had showed nothing to indicate any renal damage. A blood urea test made immediately after the onset of vomiting showed 92 mg. for each 100 c. c. The urine on repeated examinations showed albumin, casts, and blood cells, with specific gravity of 1008. After a stormy convalescence and vigorous eliminative treatment this patient finally recovered.

CASE 6. A man aged 28, had had a gastro-enterostomy for duodenal ulcer made in 1913. He returned to the clinic in 1919 with a gastro-jejunal ulcer.

Previous to operation the patient's blood pressure and urine were normal. On the eighth day following operation, the patient began to vomit, he went into generalized convulsions, but did not lose consciousness. A diagnosis of gastric tetany was made. The urine, however, showed the characteristic findings of nephria and analysis revealed the blood urea to be 120 mg. for each 100 c. c.

Since it was believed that this patient had tetany he was given 10 c. c. of a 5 per cent solution of calcium chlorid in 236.66 c. c. of normal saline, intravenously. The vomiting and convulsions stopped immediately, the blood urea went down to 31 mg. for each 100 c. c. or normal, and the patient had a normal convalescence.

CASE 7. A man aged 52. Preliminary physical examination aside from duodenal ulcer, was negative. Convalescence following gastro-enterostomy was normal until the ninth day when he began to vomit in small quantities. Gastric lavage was instituted with no relief. Urine examination at that time showed specific gravity 1010, with casts, albumin, red blood cells and white blood cells. Blood urea 290 mg. per 100 c. c. of blood, blood nitrogen of 192 mg.

Phthalien 7.5 per cent, blood creatinin 1.7 mg. One week later under treatment for his renal condition. Blood urea dropped to 192 mg. and urea nitrogen to 92 mg. The patient recovered.

CASE 8. A female, aged 48, with obstructing duodenal ulcer. The kidney findings were negative previous to operation. She began to vomit on the eighth day, became delirious and had convulsions. The urine showed a specific gravity of 1007, with albumin, red blood cells and white blood cells. Blood urea showed 26 per 100 c. c. and a urea nitrogen of 11 mg. per 100 c. c. Phthalein 65 per cent. This case was peculiar in that a peripheral neuritis developed, also a rather marked degree of myocardial damage. Blood urea made one week following the first examination showed 36 mg. per 100 c. c. and urea nitrogen 11 per 100 c. c. After a severe, prolonged convalescence the patient recovered. This case was atypical in the blood urea findings, the neuritis and myocardial damage produced evidently a severe grade of toxemia.

Eight cases are undoubtedly insufficient material from which to draw any definite conclusions, but we are confident that further study is justifiable and will reveal the importance of considering uremia as a possible cause of postoperative vomiting in gastro-enterostomy. The experimental work that we are reporting later gives us strong reason to assume that a toxin may be produced in the duodenum, that under favorable conditions will produce nephritis, an assumption that is directly in line with Whipple's work on ileus.

ST. JOSEPH'S HOSPITAL MEDICAL AND SURGICAL CLINIC.*

BY CHESTER M. ECHOLS, M. D.,

MILWAUKEE

Case 1. Carcinoma of lip.

The first patient to be operated upon this morning represents a fairly common type. He is 60 years of age and a smoker. For some years past he has had slight scale formation on the ver-

*Second Thursday of each month.

million border of the lower lip. He now has, as you see, an ulcerating sore on the left half of the lower lip which involves the angle of the mouth. The surface of the ulceration is moist and its edges are indurated. There are no discoverable metastases, none of the regional lymph nodes being palpable. The upper teeth on the left side are loose and somewhat carious.

One feature of this ulceration which appears atypical is its relatively rapid growth. The patient claims that it has attained its present size from a small beginning within two months. Too much reliance must not be placed upon the patients' statements as to the first appearance of a malignant growth. This man did not consult a physician until yesterday. Any man who is so careless about his physical ailments as to neglect a growth of this size might easily be mistaken in trying to fix the date of its onset. Only recently a highly intelligent professional man, in consulting me about a hard cancer of the lip the size of a thumb nail, protested that he had first discovered it only five weeks previously.

The following is a brief extract from the history of the patient before you:

Mr. E. K.—Age 60, white, architect. Family history irrelevant. No previous illness since childhood.

For several months past there has been a moderate amount of scale formation on the left half of the lower lip. Within the past two or three months he says an open sore developed and grew steadily to its present proportions. He has been free from pain until the past few days. He treated the sore with home remedies and did not consult a physician until yesterday. Has not lost weight. General health good.

Examination: Well developed and nourished man of 60. Appears rather anemic. There is a conspicious ulceration of the lower lip involving the left angle of the mouth. The ulcer has a moist grayish surface and indurated edges. There are no palpable lymph nodes about the jaw or neck. The teeth are in bad condition and all the upper teeth on the left side are loose.

Heart and lungs show no abnormalities. Liver, spleen, and kidneys not palpable. No hernia. Genito-urinary organs and extremities neg. Temp. 98.6, pulse 76.

Now that the patient is asleep, I will proceed to extract all the teeth in the left upper jaw. If there were any lumps whatever palpable, we would include in our operation an extensive dissection of the left side of the neck and sub-maxillary region. There being none, we will content ourselves with a wide, clean excision of the growth, extending our incision downward well toward the point of the chin. During convalescence and at intervals thereafter we shall advise massive doses of Roentgen rays. The soft tissues in this region are so mobile that we have, as you see, no difficulty in making a fairly good looking mouth even after so extensive an excision. Moreover, the blood supply is so abundant that there is practically no danger of any sloughing of the flaps.

[Now comes the most interesting part of the story. The tissue removed from the lip of the above-described patient was examined microscopically by Dr. Daniel Hopkinson and *found not to be epithelioma at all, but blastomycosis!* Good surgery, perhaps, but poor diagnosis, you will say. Without entering into a discussion of blastomycosis, which is ordinarily easy to diagnose and difficult to cure, it is of interest to note that in this patient the lesion bore a striking resemblance to epithelioma. Its indurated base, its chronic character, and its occurrence in the lower lip of a man 60 years of age all conspired to make the error an easy one to fall into. It is interesting, too, to note that we unwittingly gave the patient the most effective treatment in resorting to excision; for blastomycosis is notoriously refractory to local measures of a less radical kind.

Case 2. Cervical and Axillary Adenitis.

We usually think of tuberculosis adenitis as a disease of childhood or early adult life. This patient is a robust looking woman of 39 years. Yet she has on the left side of the neck a series of hard lumps all the way from the external ear to the clavicle. There is a cluster of similar lumps in the left axilla. These tumors are not tender to pressure. One of the larger ones, near the angle of the jaw, suppurated and broke open about two or three weeks ago and has since been discharging pus. How do we know this is a case of tuberculous adenitis, and not Hodgkin's Disease or syphilis? See what the history says:

Mrs. H. M., white, married, age 39. Sent to hospital Jan. 11th, 1922, by Dr. McCabe, on account of extensive cervical and axillary adenitis. Family history negligible. Measles in childhood. Had chorea at 14 and again at 20. Menstruated at 17. Married at 23. Two children; normal deliveries; no misc.

17 years ago she had an extensive operation for the removal of the enlarged lymph nodes from the right side of the neck. Examination of the tissues removed at that time is said to have demonstrated tuberculosis. Since that date she has had two other operations for recurring tuberculous lymph nodes of the right side of the neck.

(Remainder of history and physical examination here omitted in the interest of brevity.)

We have here a healthy looking, well-nourished woman of 39 who, in the past 17 years has had three operations on the right side of the neck by three different surgeons. I forgot to say that the blood picture is now normal.

Because the skin of the neck has been contaminated by discharging pus from one of the broken down tumors, we shall proceed to remove the axillary tumors first. Through this incision I find instead of the two or three lumps which were palpable through the skin, there are at least a dozen of them from cherry to olive size. I am now removing some of them from the apex of the axillary space behind the outer end of the clavicle, where they are continuous with the cervical chain. In dissecting out the cervical glands, you will notice that I am using an incision from near the mastoid to the clavicle. In this dissection, our chief concern, aside from removing every palpable lump, is to avoid damage to the facial and spinal accessory nerves and the contents of the carotid sheath.

[Post operative note.—There was an unusual complication of convalescence. On the second day the patient developed a fulmiting erysipelas which soon spread to the entire face, neck and upper part of the chest. Her temperature fluctuated between 103 and 105 for the greater part of a week and then rapidly subsided without any specific treatment, so that she was able to go home on the 12th day after operation. While one can not always be certain of the source of infection in such cases, it seems reasonable in the present instance, to blame the pre-existing pus sinus which lay directly in the field of our operation.]

CONVULSIVE DISORDERS OF CHILDHOOD.

All those conditions in which convulsions are simply one of the manifestations of some evident disease of the central nervous system, such as cerebral tumor, cerebral paralysis, idiocy or meningitis, are not included in this paper by John Lovett Morse, Boston (*Journal A. M. A.*, Jan. 21, 1922). He limits himself to the consideration of those conditions in which there are no evidences of such disease.

PREVENTIVE MEDICINE

Edited by
W. D. STOVALL, Chairman
Section on Preventive Medicine, State Medical Society of Wisconsin

This Section is open to all members of the State Medical Society and others who wish to discuss subjects pertaining to Public Health. Original articles, and criticisms of statements appearing in this section are earnestly solicited. Questions concerning public health procedure will be answered. Address communications to Dr. W. D. Stovall, State Laboratory of Hygiene, Madison, Wis.

WATER AS A FACTOR IN THE SPREAD OF TYPHOID FEVER

BY H. M. GUILFORD, B. S., M. D.,
Epidemiologist, Wisconsin State Board of Health,
MADISON.

To write about typhoid fever and its connection with water supplies is seemingly to write upon a subject on which the last word was long ago written. The literature is vast. Notwithstanding this the water problem is still pertinent to public health workers. Unquestionably, in past years, water has been the greatest intermediary in the exchange of typhoid, but for obvious reasons it is a lessening factor as time goes by. To state the proportion of water-borne cases to all cases is only hazarding a guess, but Whipples' "Typhoid Fever," written in 1908, estimates 35%. It would accordingly be less in 1922.

More than once lately the writer has heard it remarked that water is now a minor element in the spread of the typhoid bacillus and that the typhoid "carrier" is the culprit to the fore. While there may be considerable truth in this the history of typhoid should not be forgotten and where unpurified water supplies exist history is liable to repeat itself.

A study of mortality rates of large communities, which have changed from a contaminated to a purified water supply, shows a typhoid drop not only through the elimination of epidemics but in the steady year-in and year-out typhoid mortality The drop in this continuous typhoid reserve rate means that these cases were produced by widely scattered and more resistant organisms that were commonly present in the water throughout the year. Doubtless many of these cases belonged to a class that is considered untraceable and inevitable. In the consideration of this evidence the writer is of the opinion that there is more water-borne typhoid than is now commonly acknowl-

edged, particularly in small communities and rural districts where limited populations do not permit of sufficient ratios of cases to make the origin evident.

The bacillus typhosus is hard to recover from water, the colon bacillus being taken as a guide to impurity. In all experiments concerning the viability of the organisms this fact must be borne in mind. A great number of experiments have been conducted in this field and the following is a resumé of the findings:

1. In sewage polluted streams the bacillus dies quickly during the open months of the year. Some observers say this occurs in three or four days. An experiment by Houston on raw London top water showed 99.9% reduction the first week; complete by the eigth week. In the winter time the viability is greater, doubtless because of lack of sunlight and impaired action of the bacteria.

2. In cisterns, lakes and reservoirs the bacillus has not been recovered after two months and experiments usually show a shorter period of viability.

3. In wells, experiments vary and are not well worked out at the present time. Statements range from three days' viability to the claim made of continued saprophytic existence. Bacterial action and sunlight are factors in longevity. It is probably safe to say that the water of an inoculated well is purified within a year's time, but in practice, however, the uncertainty of drainage is such that any well that has once been infected should be abandoned altogether.

4. Springs offer the problem of both overground and underground drainage and the longevity of the bacillus is similar to that in wells. Provided the overground drainage is remedied and the spring closed to use for a year, the water is probably safe. The placing of the time at one year is purely a statement of my own. It is made on the assumption that any overground flow may penetrate the soil and carry deep, as well as hold back, some bacteria that may be released later through subterranean avenues. The status of underground drainage is similar to that of any well. The bubbling spring of considerable volume is likely to be the outlet of a distant water supply and offers considerable of a problem. If the typhoid source in the spring water is uncertain the spring should be closed permanently.

5. Sea water—The bacillus has been recovered up to eight days in sea water and up to two months in tidal mud.

6. Swimming in polluted water—It is well known that typhoid has been contracted in swimming pools and that these pools require treatment in order that safety may be assured. As for river swimming little typhoid is traceable among bathers. We have in mind some untraceable typhoid in the late summer, among boys, most of whom admitted swimming in the Mississippi River. The small amount of water swallowed and the tenacity of the stream-scattered bacteria mitigate against this source as a common one. An incident in which the writer was concerned had to do with an inland lake in which a thousand or more people sometimes bathed in a limited area on summer evenings. Tests taken in the evening showed high pollution of bacteria but in the morning, after a night of wave action and undercurrents, the water was comparatively clear. During a number of years no typhoid could be traced to this source.

CANCER WEEK PROGRAM—STATE OF WISCONSIN.

October 30 to November 5, 1921.

BY DR. I. F. THOMPSON.

MADISON.

For the last several years the medical profession has realized that cancer was becoming more prevalent. The men in general practice would discover growths incidental to other ailments or they would have brought to their attention, too late for treatment, a condition which anyone could recognize as cancer. In these cases operations were seldom successful. It is no wonder that the general practitioner and the public were skeptical of the value of an operation for this condition or the possibility of a cure.

In an effort to arrive at a solution of the problem the American Society for the Control of Cancer was organized in 1913. From their study it soon became apparent that the cure of cancer was only possible by the education and enlightenment of the general public on the subject of cancer. The reason for this belief can be seen when we realize that no steps could be taken to remove these

growths or the individuals of their own accord sought medical advice. As a result of the campaign the American Society for the Control of Cancer carried on in certain parts of our country, it was possible to demonstrate by the number of cases presenting themselves for early treatment the good effects of such a program. At the suggestion of their president it was thought wise to endeavor to carry on a nation-wide cancer week campaign.

The Cancer Committee of the State Medical Society was asked to carry on the campaign in Wisconsin.

At a meeting of the councilors, the Cancer Committee of the State Medical Society and the State Health Officer it was decided to divide the campaign into two parts:

1. The conduction of a course in graduate instruction on the early diagnosis of cancer in the different parts of the body. The course to be arranged by the councilors of the State Medical Society and the University Extension Division for the members of the medical profession, the dental profession and nurses.

2. The dissemination of information by the State Board of Health to the laity on the early suggestive symptoms of cancer in the different parts of the body.

All three agencies would, of course, work together but it was believed that the arranging for the graduate instruction for the three professions could probably be better done by the councilors and the University Extension than by the Board of Health. "And owing to the limited number of slides it would be impossible to have many such meetings during cancer week."

"And it would be a mistake to undertake the putting on of these courses for the allied profession until we are fully equipped to do so and then only one lecture can be put on at a time."

The following general plan of organization was outlined:

Cancer Committee of State Medical Society.
Councilors of State Medical Society.
State Board of Health.

1. Organization of committees in cities over five thousand. (Fifty cities of five thousand population and over in the state.)

Councilors, members of State Board of Health, local health officers or well known physicians to be selected as chairman.

2. Organization of Lecture Bureau.

University Extension.
A surgeon for each county or where available.
A few teaching surgeons for the larger cities.

3. (To be carried on by the councilors and the University Extension.)

County Medical Societies.
Special cancer meeting for physicians.
Special cancer meeting for general public.
(One or both.)

Medical Colleges.
At least one "popular lecture" to students.

Nurses.
Training Schools.
One or more special lectures.

In service.
Form letters and literature.

4. General Public.

General meeting of all interested organizations in cities of five thousand population and over.

Special talks to Women's Clubs, Fraternal Organizations, Labor Unions and similar groups in smaller cities.

5. Insurance companies.

(Six old lines and twenty-two fraternal societies have their home offices in Wisconsin.) Endeavor to have a cancer issue of company publication.

6. Literature.

Newspapers—daily and weekly.
News letters each week and special articles, original and extracts from American Society material.
Farm papers—special articles.
Life insurance bulletins—special cancer issue.
State Board of Health Bulletins—special cancer issue.
Pamphlets and leaflets.
American Society for the Control of Cancer pamphlets.
U. S. Public Health Service pamphlets.
Special leaflets and graphs to be prepared.

The general program was carried out as planned almost in its entirety.

Letters were written to selected persons asking them to assume the chairmanship of the committee in our fifty cities with five thousand population. Replies were received from about one-third of them within a very few days. The remainder were "followed-up" at short intervals until we received a reply. If they did not accept the chairmanship, others were asked to do so. In all forty-two cities carried on a more or less active campaign. The Milwaukee Health Commissioner with the resident members of the Cancer Committee organized to carry on the work in Milwaukee.

It was unnecessary to establish a lecture bureau. With a little urging a local man was usually induced to take the subject of cancer and with the outline of the American Society and the outline we prepared, and with the material we were able to provide them, they were able to present the subject in a sane and sensible manner.

In the meetings of the general public, we believed that one speaker on the program could give the general public as much information about cancer as they would be able to absorb. We therefore suggested to the local committee that the evening program should be as follows:

1. Why the general public should be interested in public health work. 15 minutes.

2. The control of preventable diseases. 15 minutes.

3. Cancer, 45 to 60 minutes.

We further suggested that some interested woman be asked to speak upon the first subject, that the local health officer, a deputy state health officer or a local physician speak upon the second subject, and that the outside speaker take up the subject of cancer.

The most successful meetings were held where this suggestion was carried out. The largest audience reported was two thousand.

In order to reach as many people as possible in cities and villages outside of cities with five thousand population a form letter was written to every Rotary, Kiwanis, K. C., Forester, Lady Forester, Elk, Eagle and Moose Lodge in the state asking that their local physician or member speak to them on the subject of cancer at a regular meeting held nearest cancer week.

In order to aid the physicians we prepared an outline for his talk and furnished him reference material. Nearly two hundred lodges held such meetings in these smaller cities.

An effort was made to interest the insurance companies in the program. The old line companies in Wisconsin do not publish bulletins. Two of them, however, agreed to print and send a copy of the "Fourteen Points About Cancer" to their membership with the yearly assessment notices. One company printed and sent the fourteen points to their policyholders, a total of four hundred thousand in number.

Many of the Wisconsin Fraternal Orders do not publish bulletins. The larger ones, however, presented all the material we sent them. The United Foresters, The Equitable Fraternal Union and the Beavers gave the material the greatest prominence.

The newspapers gave our news-letter the widest publicity. News-letters were sent to approximately five hundred newspapers each week. Few of them printed all of our letters but nearly all of them printed some of them. The news-letters were prepared according to the following plan and sent out in the same order.

1. Prevalence of cancer—a popular story to arouse interest in the subject.

2. Announce Cancer Week.

3. Why a Cancer Week—General story of what has been done in the past.

4. Prevalence of cancer—in the nation and in our own state.

5. Why we should know about cancer.

6. What we should know about cancer.

The first letter and the last three were used most generally by the papers. Practically every paper printed "What We Should Know About Cancer." The letter was essentially a rewrite of the "Fourteen Points About Cancer," which the American Society for the Control of Cancer had prepared.

The articles printed in the newspapers, farm and fraternal papers brought requests from nearly every state in the union. From this source alone we received approximately one thousand written requests by letter or card for our pamphlets. This is exclusive of the requests from committees or secretaries of societies.

As a result of the eight hundred form letters

sent to the secretaries of the local labor unions throughout the state, 15,000 leaflets were placed in the hands of the members and twelve hundred personal requests for other pamphlets were received.

The State Board of Health devoted its September Quarterly Bulletin to the subject of cancer.

The "Fourteen Points About Cancer" of the American Society for the Control of Cancer was reprinted and used extensively.

A graph showing the gradual increase of cancer in Wisconsin was prepared and printed.

The various pamphlets of the American Society for the Control of Cancer were obtained.

The Public Health Nurses of Wisconsin all received the pamphlet "How the Public Health Nurse Can Help to Control Cancer."

Every physician in the state received the leaflet especially prepared for them.

The U. S. Public Health Service pamphlet, "Cancer Facts That Every Adult Should Know," was also purchased and sent out on request.

In all excluding the pamphlets printed by the City of Milwaukee we received or purchased and distributed 130,000 pieces of literature.

The campaign awakened a widespread interest in cancer and brought out the fact that the people are anxious to learn as much as possible about the disease. The newspapers showed themselves quite willing to give space for interesting material, providing it is written in newspaper style.

The hearty response from the insurance companies leads me to believe that we have neglected a very important and willing assistant for all health lines.

The many letters from fraternal societies show a marked interest in health work among their members. A number of the societies asked that outlines be prepared for other talks and offered to open their meetings for discussion.

From our experience we believe that the greatest number of people were reached through the following means:

1. Newspapers.

2. Fraternal and old line insurance companies.

3. Fraternal organizations, using their own local physician as spokesman.

There is, of course, no way of measuring the amount of good that was done by the campaign or approximately the number of people that were reached.

PUBLIC HEALTH NEWS ITEMS

The American Public Health Association, with financial assistance from the Metropolitan Life Insurance Company, has completed a survey of 83 health departments in cities having populations of 100,000 or over. About $4,000 is the average salary of a city health commissioner.

It was found that only 1 health officer is elected by the people while 24 are appointed by the mayor, 24 by the board of health and 18 by some other board or administrative officer. In at least one-fourth of the cities studied the health officers were engaged in private practice.

During 1921 tuberculosis morbidity registration was improved to a considerable extent, the number of reported cases being exceeded only once during previous years (1917, when 2104 cases were recorded). A declining death rate with increased morbidity registration is one of the healthiest possible signs connected with public health administration.

Diphtheria exacted 20 more deaths in 1921 than during 1920. At the same time case reporting improved markedly in diphtheria. There were five less deaths but 2165 more cases of scarlet fever recorded in 1921 than in 1920, truly an encouraging indication of progress.

There was a falling off in measles prevalence and mortality during 1921. In this respect the affection ran true to form. During 1922 an increase over 1921 may be expected. There were increased numbers of deaths from infantile paralysis, smallpox and typhoid fever in 1921 over 1920 while decreases were recorded in cerebrospinal meningitis and whooping cough.

Throughout the State during January, according to the State Board of Health's figures, 116 cases of influenza were reported, as against 245 in January, 1921. In the first week of February 39 cases were reported. In the entire month of February last year 148 cases were reported, so that the ratio is no higher than in February a year ago. Eighty-five cases of pneumonia were reported last month.

The figures on cases and deaths for the past two years follow:

	1920		1921	
	Cases	Deaths	Cases	Deaths
Diphtheria	3485	365	5175	385
Measles	19159	208	3524	44
Meningitis (cerebro-spinal)	115	250	81	207
Poliomyelitis	84	17	259	62
Scarlet fever	5822	235	7787	230
Smallpox	5668	7	5216	17
Tuberculosis (all forms)	1774	2217	1899	1963
Typhoid fever	313	59	512	77
Whooping cough	6209	281	4995	157

Ex-service men applying for compensation for incapacity due to tuberculosis will have their claims recognized without delay or suspicion, upon evidence showing that their ailments had been officially reported to the local health officer in the first instance, as required by state law. This information came to the State Board of Health from the U. S. Veterans' Bureau.

The importance of this decision is seen from the statement that where cases have not been thus reported, the Veterans' Bureau may refuse to consider the applications from such claimants. In any event delay is in store for applicants until reports are filed to prove they were afflicted with tuberculosis.

There is no state law requiring milk sold to be either from tuberculin-tested cows or be pasteurized, but many cities have ordinances requiring the same thing. The courts have held these ordinances valid. The board advised that pasteurizing, if properly done, is an ample safeguard against the spread of disease through milk infection, but if not properly done gives a false sense of security.

A physician health officer is not authorized to change a diagnosis made by another physician, the only change he can make being to increase the severity of the quarantine or other restrictive measures imposed on the patient or family.

A health officer was informed that a family which had burned bedding, bedstead, couch and chairs used by a deceased tuberculosis patient could not obtain compensation for their loss.

The Rock county board of supervisors increased thesalary of the county nurse from $1500 to $1800 per year, and reelected Miss Anna Leutscher to the position.

Endorsement of the educational movement for the prevention of venereal diseases as conducted by the State board was voted by the county training school principals in session in Madison. They unanimously voted to "endorse the work of Dr. V. A. Gudex of the State Board of Health in teaching the prevention of venereal diseases and pledge our support to this cause."

Miss Gertrude Lohmann has become county nurse for Sheboygan county to succeed Miss Evelyn Smith, who resigned because of illness.

The State Medical Society's committees on Health and Public Instruction and Hygiene for Public Schools met in joint session at the University Club in Milwaukee, February16th. It was decided to ask the State Board of Health if they would have codified the State laws and local ordinances pertaining to the hygiene of public schools. It was also decided to request the President of the State Teachers' Association to appoint a committee to cooperate with our committee in working out a plan for promoting better hygiene of public school buildings and grounds.

The Committee on Health and Public Instruction at the suggestion of Dr. Sleyster decided that public health of a nature which will be interesting to the clinician can probably be developed if each county will appoint a committee on health and public instruction to work with the committee from the State Society. It seems that in this way school medical inspection can be obtained in every community through the efforts of these communities.

BONE PLATE FOR USE IN FRACTURES CLOSE TO JOINTS OR TO EPIPHYSES.

The plate described by William H. Byford, Blue Island, Illinois. (*Journal A. M. A.*, February 11, 1922), is made of noncorrosive material, 1 inch (2.5 cm.) long, one-quarter inch (6.4 mm.) wide and one thirty-second inch (0.8 mm.) thick. In each end are three fixed pins, three-eighths inch (9.5 mm.) long and one thirty-second inch (0.8 mm.) thick, with cutting points. To apply, a small incision is made, the fracture reduced and the plate hammered on. Very little force need be used. No holes need be drilled, and there is no necessity of the hands touching the wound. The plate holds firmly, and no more care in after-fixation is needed than when a Lane plate is used. To remove it, Kocher forceps are applied and the plate is withdrawn intact.

THE STATE MEDICAL SOCIETY OF WISCONSIN

ORGANIZED 1841

Officers 1922

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SPENCER BEEBE, Sparta, 2nd VicePresident
ROLLA CAIRNS, River Falls, 3rd Vice President
S. S. HALL, Ripon, Treasurer
ROCK SLEYSTER, Wauwatosa Secretary

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2nd Dist., G. Windesheim - - Kenosha

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3rd Dist., E. B. Brown - Beloit
4th Dist., W. Cunningham - Platteville

TERM EXPIRES 1925
5th Dist., W. F. Zierath - Sheboygan
6th Dist., F G. Connell - Oshkosh

TERM EXPIRES 1926
7th Dist., Edward Evans - LaCrosse
8th Dist., T. J. Redelings - Marinette

TERM EXPIRES 1927
9th Dist., Joseph Smith - Wausau
10th Dist., R. E. Mitchell, - Eau Claire

TERM EXPIRES 1922
11th Dist., J. M. Dodd - Ashland
12th Dist., Hoyt E. Dearholt - Milwaukee

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ROCK SLEYSTER, Wauwatosa
JOSEPH SMITH Wausau

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The Wisconsin Medical Journal, Official Publication

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Ashland-Bayfield-Iron	M. L. Young, Ashland	Dell Andrus, Ashland.
Barron-Polk-Washburn-Sawyer-Burnett	G. A. Larson, Hayward	D. L. Dawson, Rice Lake.
Brown-Kewaunee	W. M. Wochos, Kewaunee	F. J. Gosin, Green Bay.
Calumet	I. N. McComb, Brillion	H. C. Krohn, New Holstein.
Chippewa	G. M. Smith, Chippewa Falls	S. E. Williams, Chippewa Falls.
Clark	S. M. Kyes, Owen	A. L. Schemmer, Colby.
Columbia	W. J. Thomson, Portage	John Bentley, Portage.
Crawford	W. T. Pinkerton, Prairie du Chien	T. E. Ferrel, Seneca.
Dane	H. M. Carter, Madison	Albert Tormey, Madison.
Dodge	F. T. Clark, Waupun	A. E. Bachhuber, Mayville.
Door	H. C. Sibree, Sturgeon Bay	T. C. Proctor, Sturgeon Bay.
Douglas	T. H. Shastid, Superior	F. J. Broghammer, Superior.
Dunn-Pepin	F. E. Butler, Menomonie	J. Blom, Menomonie.
Eau Claire	L. H. Flynn, Eau Claire	H. M. Stang, Eau Claire.
Fond du Lac	W. H. Folsom, Fond du Lac	D. N. Walters, Fond du Lac.
Grant	G. C. Buck, Platteville	M. B. Glasier, Bloomington.
Green	W. B. Gnagi, Monroe	W. B. Monroe, Monroe.
Green Lake-Waushara-Adams	G. E. Baldwin, Green Lake	A. J. Wiesender, Berlin.
Iowa	D. B. Hamilton, Dodgeville	W. J. Pearce, Dodgeville.
Jefferson	T. C. H. Abelman, Watertown	H. P. Bowen, Watertown.
Juneau	E. H. Townsend, New Lisbon	A. T. Gregory, Mauston.
Kenosha	A. L. Mayfield, Kenosha	Jos. N. Palt, Kenosha.
La Crosse	F. C. Suiter, La Crosse	R. D. Jamieson, La Crosse.
La Fayette	H. O. Shockley, Darlington	R. B. Quinn, Darlington.
Langlade	L. A. Steffen, Antigo	J. C. Wright, Antigo.
Lincoln	H. G. Hinckley, Merrill	A. R. Wittman, Merrill.
Manitowoc	A. M. Farrell, Two Rivers	V. V. Kellner, Maribel.
Marathon	R. M. Frawley, Wausau	M. L. Jones, Wausau.
Marinette-Florence	J. V. May, Marinette	C. H. Boren, Marinette.
Milwaukee	P. H. McGovern, Milwaukee	Dan. Hopkinson, Milwaukee.
Monroe	W. S. Waite, Kendall	C. D. Beebe, Sparta.
Oconto	R. J. Goggins, Oconto	C. J. Ouellette, Oconto.
Oneida-Forest-Vilas	W. C. Bennett, Rhinelander	E. R. Boyer, Rhinelander.
Outagamie	N. P. Mills, Appleton	J. S. Reeve, Appleton.
Ozaukee	W. H. Drissen, Port Washington	C. A. Balkwill, Grafton.
Pierce	C. A. Dawson, River Falls	Rolla Cairns, River Falls.
Portage	C. von Neupert, Jr., Stevens Point	G. H. Lawrence, Stevens Point.
Price-Taylor	O. J. Urheim, Park Falls	G. C. Wichman, Rib Lake.
Racine	F. C. Christensen, Racine	Susan Jones, Racine.
Richland	H. C. McCarthy, Richland Center	G. Benson, Richland Center.
Rock	F. W. Leeson, Beloit	E. B. Brown, Beloit.
Rusk	C. E. Bugher, Ladysmith	L. M. Lundmark, Ladysmith.
Sauk	D. M. Kelly, Baraboo	Roger Cahoon, Baraboo.
Shawano	R. E. Van Schaick, Caroline	E. L. Schroeder, Shawano.
Sheboygan	Jos. Elfers, Sheboygan	G. J. Hildebrand, Sheboygan.
St. Croix	E. A. Wright, New Richmond	O. H. Epley, New Richmond.
Trempealeau-Jackson-Buffalo	N. S. Simons, Whitehall	F. T. Weber, Arcadia.
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Walworth	R. C. Halsey, Lake Geneva	M. V. Dewire, Sharon.
Washington	H. F. Weber, Newburg	A. H. Heidner, West Bend.
Waukesha	F. C. Rogers, Oconomowoc	S. B. Ackley, Oconomowoc.
Waupaca	E. H. Jones, Weyauwega	A. M. Christofferson, Waupaca.
Winnebago	F. G. Connell, Oshkosh	H. W. Morgenroth, Oshkosh.
Wood	D Waters, Grand Rapids	W. G. Sexton, Marshfield.

SOCIETY PROCEEDINGS

BROWN-KEWAUNEE COUNTY

The regular meting of the Brown-Kewaunee County Medical Society was held at the Beaumont Hotel, Green Bay, February 7th. Dr. A. A. Strauss of Chicago read a very interesting and instructive paper on "Surgery of the Stomach and Osteomyelitis." Dr. Edward Quick of Milwaukee was also a guest of the society.

F. J. Gosin, M. D., Secretary.

DANE COUNTY MEDICAL SOCIETY

The members of the Dane County Medical Society met in the Association of Commerce rooms, Madison, Tuesday evening, February 21st. Dr. J. C. Elsom of the physical department of the University gave an illustrated lecture on "Physiotherapy Treatment of Industrial Accidents and Post-Operative Surgical Cases." The Schick test was taken up by Dr. W. D. Stovall and the subject discussed by Dr. Robert Oleson.

KENOSHA COUNTY

The regular meeting of the Kenosha County Medical society took place at the home of Dr. H. A. Robinson, West Park place, Friday evening, February 27. Twenty-four members were present. Dr. Arens of Chicago gave a lecture on "The Diagnosis of Gall Bladder Conditions." Mrs. Robinson served a delicious luncheon during the pleasant social hour which followed the business session.

LA CROSSE COUNTY

Résumé of the work of the La Crosse County Medical Society for the year 1921.

Number of members, December 31, 1920		52
Number of new members, 1921	5	
Number of members leaving County	4	
Gain in membership, 1921		1
Number of members December 31, 1921		53
Honorary members		2
Active members		40
Non-active members		11
Number of meetings (meetings were discontinued during the months of June, July, and August)		9
Average attendance of members		32

January—Dr. J. L. Callahan read a paper on Syphilis, with a report of four cases. Discussion was led by Drs. Reay, Douglas and Houck.

February—Dr. J. K. Schreiner (President elect) entertained the society with a chicken dinner at the Elks' Club. This was followed by the reading of a paper by Dr. E. H. Townsend, Jr., on "Herpes Zoster complicated with chicken pox." Discussion was led by Drs. Skemp, Carlsson and Heraty.

March—The Henke Clinic treated the society to a dinner and smoker at the Hotel Stoddard. Dr. R. H. Gray presented a paper on "Tetanus" with a report of an unusual case. Discussion was led by Drs. Crowell and Smedal.

April—Dr. R. E. Flynn furnished a paper on "Epidemic Encephalitis." Dr. Bangsburg followed by a paper on "The Association of Middle Ear Infections and Epidemic Encephalitis." A general discussion followed.

May—The society met as guests of Forest Home, where they were royally banquetted, then treated to an interesting and instructive leteure on "The Diagnosis of Tuberculosis" by Dr. A. A. Pletye (State T. B. expert). A number of cases were presented, demonstrated and discussed.

September—Dr. N. P. Anderson read an interesting paper on "Basal Metabolism." Discussion was led by Drs. Smith, Smedal, Skemp and Coldren.

October—Dr. M. A. McGarty presented a paper on "The more recent experiments and theories of the origin of Carcinoma."

Dr. Johnson (Assistant professor of Surgery) University of Minnesota, followed with a lecture on the same subject. Discussion was led by Drs. Coldren, Egan, Gunderson, Skemp, and Anderson.

The society voted to arrange for a lecturer and a suitable hall for a public meeting during Cancer Week on "The prevention and early diagnosis of cancer."

November—Dr. R. D. Jamieson presented a paper on "Blood Chemistry in relation to the normal and abnormal amount of sugar, creatinin and urea nitrogen." A general discussion followed.

December—Dr. A. A. Maurer presented a paper on "The Suprarenal Glands," emphasizing the necessity of future practice in the balancing of the endocrines.

The marked increase in attendance, the interest shown by members in presenting papers, the lively discussions and the good fellowship which existed was in marked contrast to that of former years.

The following officers were elected for the year 1922:

President.....Dr. F. C. Suiter
Vice-President.....Dr. E. C. Carlsson
Secretary Treasurer.....Dr. R. D. Jamieson

R. D. Jamieson, M. D., Secretary.

MILWAUKEE COUNTY

The regular meeting of the Milwaukee County Medical Society was held at the Hotel Pfister on Friday evening, February 10, 1922, at 8:30 o'clock. The following program was presented:

I. Presentation of clinical cases, pathological specimens, and Roentgenographs.

II. "Interpretation of Hematuria," by Dr. Walter K. Gray. (Discussion opened by Dr. E. A. Fletcher and Dr. A. G. Jenner.)

III. "Stone in the Kidney and Ureter," with lantern slide demonstration by Dr. Herman L. Kretzschmar of Chicago, by invitation.

The next regular meeting of the society was held at the Public Museum, Eighth Street entrance, on Friday evening, March 10, at 8:30 o'clock.

The following program was presented:

Symposium on Cancer:

1. Sociologic Aspects and Obligation of the Medical Profession to Perfect Itself in Early Diagnosis. By Dr. P. H. McGovern.

2. The Cancer Question. By Dr. C. H. Bunting, Professor of Pathology, University of Wisconsin.

3. Diagnosis:

a. Buccal Cavity.
By Dr. G. V. I. Brown.

b. Gastro—Intestinal Tract.
By Dr. Philip F. Rogers.

c. Breast.

d. Gynecological.
By Dr. Jos. P. McMahon.

e. Genito—Urinary Tract.
By Dr. E. A. Fletcher.

f. Dermatological.
By Dr. Harry R. Foerster.

These talks were short and snappy and accompanied by lantern slide illustrations.

Daniel Hopkinson, M. D., Secretary.

MILWAUKEE MEDICAL SOCIETY

A meeting of the Milwaukee Medical Society was held Tuesday, February 14th, at which the following clinical meeting program was given:

1. Feeding with Czerney-Kleinschmidt Mixture with presentation of cases.—Dr. Fellman and Dr. Kastner.

2. Spontaneous Pneumo-thorax with presentation of a case.—Dr. R. Blumenthal. Discussion opened by Dr. Ide and Dr. Patek.

3. Papilloma of the Intestine.—Dr. J. L. Yates. Discussion opened by Dr. Stevens and Dr. Thalheimer.

4. A case of Teratoma of the Kidney.—Dr. O. R. Lillie. Discussion opened by Dr. C. A. Evans.

5. A case of Carcinoma of the Renal Pelvis with Pathological Specimen.—Dr. W. Ragan (By Invitation.)

The regular meeting of the Milwaukee Medical Society was held Tuesday, February 28th, at 8:15 P. M., and the following program given:

1. Presentation of clinical cases, pathological specimens, X-ray plates.

2. Pin-worm infection of the appendix. Dr. Ernest Miller.

3. Tuberculosis of the anterior chest wall. Dr. F. B. McMahon.

4. The experimental transformation of muscle. (Lantern Slides.) Dr. E. J. Carey, Professor of Anatomy, Marquette School of Medicine. (By invitation.)

A Special Obstetrical program was held by the Society, Tuesday, March 14th, arranged as follows:

1. Management of Breech.—Dr. H. W. Shutter.

2. Version.—Dr. R. W. Roethke.

3. Management of Placenta Praevia.—Dr. J. P. McMahon.

4. Forceps.—Dr. C. H. Davis.

5. Motion Pictures.

Lawrence G. Sykes, M. D., Secretary.

SHEBOYGAN COUNTY

The Sheboygan County Medical Society held a meeting at the Elk's Club, Sheboygan, on the evening of Feb. 28th. A banquet at 6:30 was followed by a talk on "Cardiac Arrythmias, Their Diagnosis and Treatment," by Dr. Malcom F. Rogers of Milwaukee. The meeting was well attended, about forty members being present.

G. J. Hildebrand, M. D., Secretary.

WALWORTH COUNTY

The Walworth County Medical Society held its first meeting of the year at the Elkhorn hotel, Elkhorn, Wisconsin, on the evening of February 15th. Fifteen doctors were present and seven of them had their wives with them.

The first thing on the program was one of the excellent chicken dinners that Landlord O'Brien knows so well how to serve and to say that all present did it full and ample justice is paying but small tribute to the appetizing condition of the weather and the ten to twenty mile drive that most of the doctors took to get to the meeting.

Following the feed the ladies went to the movies and the members settled down to business. Among other things they voted in three new members, made arrangements to put on the full University Post Graduate course in Obstetrics, arranged for other medical and social meetings and helped to cement the usual goodfellowship that has always existed among Walworth county physicians.

Dr. G. Windesheim, Kenosha, was a guest of the Society and gave one of his characteristic pithy addresses. Dr. A. A. Pleyte of the Wisconsin Anti-Tuberculosis Association was also a guest and gave a short interesting talk.

M. V. Dewire, M. D., Secretary.

WAUKESHA COUNTY

An interesting joint session of the Waukesha County Medical Society with the county dental society was held at 6:30 Wednesday evening, February 8th, at the Majestic Hotel, Oconomowoc. The speaker of the evening was Dr. Julius A. Toren of the Chicago Research Club who spoke on "A Physician's Views of Mouth Infection." About thirty physicians and dentists of the county attended the meeting.

ASSOCIATION NEWS

WISCONSIN SURGICAL ASSOCIATION.

Annual Session.
Milwaukee, Wisconsin.
Wednesday and Thursday,
April 12 and 13, 1922.
Headquarters,
The Hotel Pfister.

PROGRAM.

April 12.

Morning.

8-9. Dr. F. J. Gaenslen, Milwaukee. Orthopedic Clinic.

9-10. Dr. E. V. Smith, Fond du Lac. Critical Review of Some Surgical Fatalities.

10-11. Dr. Reginald H. Jackson, Madison. The Value of Radium in the Treatment of Malignant Disease. Illustrated.

11-12. Dr. J. P. McMahon, Milwaukee. Demonstration of cases treated with Radium.

Afternoon.

2-3. Dr. J. M. Dodd, Ashland. "End Results of Fractures." Illustrated.

3-4. Dr. J. B. McLaren, Appleton. "Treatment of Empyema."

4-5. Dr. W. E. Ground, Superior. "Tumors of the Breast." Illustrated.

5-6. Dr. H. M. Richter, Chicago. "Surgical Indications in Gastric Diseases."

Evening.

7:30. Election of Officers.

Dr. F. G. Thompson, Chicago. "The Retrocecal Appendix."

Dr. Hedblom, Rochester, Minn. "Extrapleural Thoracotomy in the Treatment of Bronchiectasis."

Dr. D. B. Phemister, Chicago. "Bone Transplantation in Ununited Fractures."

April 13

Morning.

8-9. Dr. L. E. Fazen, Racine. "Advanced Rickets." Illustrated.

9-10. Dr. J. F. Smith, Wausau. "Open Treatment of Fractures." Illustrated.

10-11. Dr. W. G. Sexton, Marshfield, "Diagnosis of Tuberculosis of the Kidney." Illustrated.

11-12. Dr. A. B. Kanard, Chicago. "Trigeminal Neuralgia, Experimental and Clinical Studies. Illustrated.

Afternoon.

2-3. Dr. W. A. Munn, Janesville. "Relaxed Perineum." Illustrated.

3-4. Dr. P. P. M. Jorgenson, Kenosha. "Cholecystectomy—its failure to give relief in certain cases of Cholelithiasis."

4-5. Dr. Edward Evans, LaCrosse. "Clinical Discussion of Interesting Cases."

5-6. Dr. W. H. Bartran, Green Bay. "Fractures of Upper Part of Humerus." Illustrated.

Evening.

Banquet.

1. President's Address—Dr. J. V. R. Lyman, Eau Claire. "Preoperative and Postoperative Treatment and Care of Patients."

2. Dr. Wayne Babcock, Philadelphia. "Spinal Anesthesia." Illustrated.

3. Dr. Frank Billings, Chicago. "Address in Medicine."

The Banquet and Evening session of Thursday will be held jointly with the Medical Society of Milwaukee County. There will be a special bulletin issued daily. Headquarters to be at the Hotel Pfister. All members of the State Medical Society are invited to attend this session: upon your arrival register immediately at the information bureau.

Daniel Hopkinson, Sec'y.

THE ST. LOUIS MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The arrangements of the St. Louis profession for the meeting places for the Session of the A. M. A., which is to be held in their city May 22-26 next, are singularly fortunate and convenient; never has the Association been so well favored in this respect. The district in which the meeting is to take place is at the west edge of the business section of the city, easily accessible from all directions by street car or otherwise and not more than fifteen minutes street car ride from the most distant hotel. The grouping of the meeting places is so compact that should one walk from the Registration Building (Moolah Temple) to the farthest hall it can be done in ten minutes or less; from section to section is a matter of from one to five minutes. The convenience of the location and arrangements of the different halls is more outstanding than in any other city in which the Association has met, and a decided improvement over the accommodations which were had at the meeting in St. Louis, 1910.

The Registration office, Post Office and Commercial Exhibit is to be in the Moolah Temple (Shrine), a beautiful and commodious building on Lindell Boulevard, two blocks west of Grand Avenue. At the other extremity of the group is the Odean, the home of the St. Louis Symphony Orchestra, with a main hall which seats better than 2,000, and several lesser halls. The main hall will be used for the opening session. Its acoustics are particularly good and suited to our purpose. The Sections on Practice of Medicine and of Diseases of Children meet here. In the assembly hall of the same building the Sections on Pharmacology and Therapeutics, and on Pathology and Physiology will meet. (It will be noted that there has been an aim to foregather closely

allied sections.) The Sheldon Memorial, a very beautiful new hall on Washington Avenue one-half block west of Grand Avenue, which most admirably meets all requirements, will be the meeting place of the Sections on Ophthalmology, and Laryngology, Otology and Rhinology. The Section on Surgery, General and Abdominal, and on Obstetrics, Gynecology and Abdominal Surgery, will be held in the Third Baptist Church on Grand Ave., a situation well suited to the demands. The Sections on Orthopedics and Nervous and Mental diseases will meet in the Law School of the St. Louis University, on Lindell Ave., a few steps west of Grand. The hall easily seats 500 and is both comfortable and convenient. Dermatology and Syphilis and Urology will use the large Union Methodist Church, on Delmar Avenue just west of Grand, which meets every requirement. The Sections on Gastro-Enterology, Proctology and on Preventive Medicine will use the large hall in the Musicians' Club on Pine Street, east of Grand Ave., and next to the building of the St. Louis Medical Society, where the House of Delegates will hold its sessions. The Section on Stomatology is assigned to the assembly hall of St. Peter's Parish House, one block west of Grand on Lindell. Immediately in this district will be found three of St. Louis' most important Clubs, the St. Louis, University and the Columbian. Restaurants catering to every grade of patronage are numerous in the district and precautions have been taken to insure that normal rates continue during the meeting.

The St. Louis profession is preparing for an unusual attendance; hotel reservations are coming in rapidly but it is proposed that even the late comer shall be comfortably housed. The wise traveler, however, makes his reservation as early as he finds it possible. Dr. M. B. Clopton, 3525 Pine St., St. Louis, is Chairman of the Committee on Sections and Section Work.

NEWS ITEMS AND PERSONALS

Dr. Gerhard A. Bading, former health Commissioner of Milwaukee, has been appointed as minister to Ecuador, South America, by President Harding.

The dentists of Superior acted as hosts at the annual banquet of physicians, dentists and druggists, held in Superior, February 14th.

The Milwaukee County Public Health Society has recently been organized, its purpose being to unify and organize the efforts of men and women actively engaged or interested in promoting public health work and to centralize the existing public and private health organizations. Dr. E. F. Peterson, Wauwatosa, was elected as temporary chairman of the society.

Dr. A. C. Niemann, Watertown, accompanied by his wife and daughter sailed for Germany, March third. Dr. Niemann expects to spend two years in the various clinics in Europe in postgraduate work.

The board of trustees of St. Luke's Hospital, Racine, recently met and appointed a staff of which Dr. J. G. Meachem, Sr., was made chief. Up to this time, the hospital had had no staff but one was appointed in conformance with the requirements of the American College of Surgeons.

Dr. R. S. McClinton, formerly of Saginaw, Michigan, has purchased the practice of Dr. P. S. Traxler, Oakfield. Dr. Traxler has removed to Bangor, Michigan, where he will take care of his father's business interests.

The new Lutheran Deaconess Hospital at Beaver Dam was formally opened to the public early in February. Miss E. A. Hildebrandt, formerly surgical supervisor at the Wisconsin Deaconess Hospital, Green Bay, has been appointed superintendent of the new institution.

Dr. and Mrs. F. E. Walbridge, Stevens Point, recently left with a party of friends for a trip through California and other western states.

Dr. W. E. Fairfield, Green Bay, recently suffered a severe fall.

Dr. E. A. Ketterer of Montfort and his driver narrowly escaped death when their car began sliding down a hill backward toward the raging waters of Blue River. Fortunately, they succeeded in stopping the car but not until the doctor had his hip severely injured.

Dr. Marion Holliday, Oshkosh, was choked into unconsciousness and robbed of about twenty-five dollars when responding to a call by a patient. It is thought the call was a fake.

The cornerstone of the new $150,000 government hospital at Soldiers Home was laid Sunday afternoon, February 26, by Harry B. Mortimer, president of the Junior Association of Commerce, before 5,000 people. More than a hundred civic, fraternal and patriotic organizations took part in the ceremony.

Dr. A. J. Pullen has sold his practice at North Fond du Lac to Dr. D. A. Bronson of Telluride, Colorado, and located in Fond du Lac.

Dr. W. E. Ground, Superior, was the guest of honor at the annual banquet held at the Hotel Superior, February 10, by the Douglas County Medical Association. The banquet was a complete suprise to Dr. Ground, the occasion being the celebration of his sixtieth birthday and the completion of thirty years of practice in the city.

City physicians are employed in connection with poor relief in 13 Wisconsin cities of the second and third classes at the present time, according to a report on the subject prepared at the request of a Wisconsin city by the Municipal Information Bureau of the University of Wisconsin Extension Division. Whether such a city employs a city physician depends as a rule, the report shows, upon whether the city is operating under local or county system of poor relief. Beloit, Madison, Janesville, La Crosse, Superior and West Allis operate under the county system and have no city physicians. Apple-

ton, Ashland, Fond du Lac, Green Bay, Kenosha, Manitowoc, Marinette, Oshkosh, Eau Claire, Stevens Point, Sheboygan, Waukesha, and Wausau, operating under the local system, employ city physicians. The city physician and the health officer are different officers in all of these cities except Green Bay and Oshkosh.

Chiropractors can not legally append the abbreviation "Dr." or "D. C." to their names while practicing in Wisconsin, J. E. Messerschmidt, assistant attorney general, has advised Dr. J. M. Dodd, secretary of the board of medical examiners. A chiropractor not being licensed to practice either medicine, surgery, or osteopathy "is expressly prohibited from using the word 'doctor' or the letters 'Dr.,'" Mr. Messerschmidt said. "The letter 'D' in the abbreviation 'D. C.' as I understand it," he said, "stands for 'doctor practicing as a chiropractor.' I am therefore of the opinion that the use by a chiropractor of the abbreviation 'D. C.' or 'Dr.' is unlawful and in violation of the statutes."

Dr. J. C. Wright celebrated the fortieth anniversary of his practice of medicine on Tuesday, February 21. In 1907, Dr. Wright, accompanied by his family, moved to Antigo to make his home because of the better educational advantages there. During the past fifteen years Dr. Wright has served as county physician for three terms, as city physician and city health officer for a number of years, and is now secretary of the Langlade County Medical Society.

At the Kiwanis luncheon held in Sparta, February 8, Dr. Edward Evans was the speaker of the day, he choosing as his subject the origin of hospitals.

Dr. Thomas Laughlin, Hartford, has been named by the Washington County board as county physician for the western part of the county.

The U. S. Veterans' Bureau has acquired twenty-nine public health service dispensaries and their out patient facilities. Four of these dispensaries are in Wisconsin at Milwaukee, Ashland, La Crosse and Green Bay. The utilization of such facilities by the bureau will considerably strengthen medical services offered disabled veterans. In addition to the relinquishment of the dispensaries by the United States public health service, equipment and personnel will also be turned over to the veterans' bureau. All dispensary personnel and equipment will be under the jurisdiction of the respective managers in which districts these dispensaries are located.

Dr. L. R. Fowzer, who practiced for a number of years at Manawa and later at Milwaukee, has located in Stevens Point.

At the monthly staff meeting of the Hanover Hospital, Milwaukee, Dr. Edward H. Cornell, Chicago, gave an illustrated lecture on "Caeserian Section."

Several hundred Wisconsin doctors are still technically violating the state prohibition law because of their failure to obtain permits to handle intoxicating liquors. The process of furnishing permits to physicians is being held up in a great number of cases pending recommendation of district attorneys, and of the grant of permits by the federal prohibition department. The grant of state permits to doctors is dependent on their first securing their federal authorization to handle liquors. Large numbers of those who need state permission before they can legally fill prescriptions, are held up pending the fulfillment of the requirements of the Volstead act.

Dr. E. P. Evans has announced the opening of offices at 1404 Majestic Building, Milwaukee, and will limit his practice to diseases of children.

The Wisconsin Alumni Society of the University of Pennsylvania held its twenty-eighth annual banquet at the University Club, Milwaukee, February 20th. Dr. Oscar Lotz was elected president of the society to succeed Dr. J. G. Taylor whose term had expired.

Dr. Henry Bascom Thomas, orthopedic specialist, of Chicago, was at Beloit, on Feb. 28, 1922, and gave an address before the members of the Rock County Medical Society, his topic being, "Auto Bone Transplantation," from personal observation.

DEATHS.

Dr. G. G. Gobar, Muscoda, died at the Boscobel Hospital, March 1, 1922, following an operation for gastric ulcer. Dr. Gobar was born in 1868 and graduated from the Rush Medical College in 1891. He was a member of the Grant County, Wisconsin State and American Medical Associations.

Dr. John A. Ballard, formerly of La Crosse, died at his home in Galesburg, Illinois, February 18, 1922. Dr. Ballard was born in Freyburg, Maine, February 11, 1842. He enlisted in the army early in the Civil War, after the close of which he entered the Northwestern Medical School, graduating in 1868. He later took postgraduate work at the Rush Medical College and at Bellevue Hospital, New York. He then took up practice in Chicago and subsequently practiced for thirteen years in La-Crosse. He retired from active practice about fifteen years ago at which time he removed to Galesburg.

Dr. W. K. Quackenbush, Argyle, was found dead at his home Wednesday morning, February 22, 1922. Dr. Quackenbush had been located in Argyle only a few weeks, having taken over the practice of Dr. W. B. Williams.

Dr. C. A. Beebe, Fond du Lac, died at the Illinois General Hospital, Chicago, March 6, after a week's illness with pneumonia. Dr. Beebe was born in Portland, New York, in 1853. He received his preliminary education at the Forestville Academy, later entering the Cleveland Medical College from which he graduated in 1882. He practiced in Marshall, Wisconsin, for seventeen years and then went abroad for further study and postgraduate work. On his return, he located in Fond du Lac where he practiced until the time of his death.

Dr. Frank Byrnes, Chicago, died March 1, 1922, after a short illness. Dr. Byrnes was born in the town of

Empire, Fond du Lac County, and practiced medicine in that county until twenty-five years ago.

Dr. Solon Wakefield, a practicing physician of West Salem for over forty years, died after a short illness, February 8, 1922. Dr. Wakefield was born in 1851 and graduated from the Rush Medical College in 1879. He was a member of the La Crosse County, Wisconsin State and American Medical Associations.

Mrs. U. J. Durner, wife of Dr. U. J. Durner, Milwaukee, died at St. Mary's Hospital, February 15, 1922.

THE SHEPPARD-TOWNER BILL—PUBLIC HEALTH OR POLITICS?

At a recent meeting of a medical society, a member asked, "Why didn't the A. M. A. prevent the passage of the Sheppard-Towner bill?" The same question has been asked many times by others. The Sheppard-Towner bill was passed, not for public health reasons but on account of political exigencies. Women had just been given the vote. No one knew how they would use it. Nearly every congressman had a distinct sense of faintness at the thought of having all the women in his district against him. Male opposition he was used to. But the women's vote! Awful thought! Suppose all the women voted against him! Shrewdly and persistently, the idea was impressed on the minds of the women of the country that the Sheppard-Towner bill was a wonderful measure; that in some miraculous fashion it would save thousands of lives of mothers and babies now being lost; that it was the one bill all women must support. At the same time, all members of Congress were told again and again that the women of the country demanded the measure and that each congressman's future depended on his vote on this bill. Members of Congress of years' experience say that the lobby in favor of the bill was the most powerful and persistent that had ever invaded Washington. As the presidential campaign approached, the apprehension increased. Each party wanted the women's vote. The Democratic party specifically endorsed the bill in their platform. The Republican platform did likewise but somewhat vaguely. Republican politicians perhaps feared the contrast. Presumably to offset this Democratic bid for women's votes, Mr. Harding in his campaign speeches practically pledged his party to the passage of the bill. In his first message to Congress, he specifically endorsed it and called on the Republican majority in Congress to pass it.[1] His personal medical representative, and several other influential medical men, appeared before the House committee and urged its passage. But as passed by the Senate, it was an impossible measure. The House Committee on Inter-State and Foreign Commerce, unable to accept the original Senate bill, but under strong pressure and orders from above to report out some bill, struck out the old one completely, substituted an entirely new bill, which is practically only an appropriation measure, and reported "that the bill should pass." The party leaders all fell in line. Finally, just before the vote was taken, the floor leader of the Republican majority, Mr. Mondell, in a ten minute speech, said nothing about the merits of the bill but did say that he believed in keeping pledges and that he asked all the Republicans in the House to vote for it. The result, as might have been expected, was that the bill passed by a vote of 279 to 39. The passage of the bill could not have been prevented. Its adoption, under the circumstances, was a political necessity and a redemption of party pledges. We repeat: It was not passed as a health measure; its inception, the agitation for its passage and its support up to the final adoption were political. There were just two factors; the women's vote and the politicians' fear. So much for the political situation. While *The Journal* realized that it was fighting almost a lost cause, it did, nevertheless, oppose the measure most vigorously, both by utilizing its columns and by furnishing congressmen with arguments and data against the bill. In fact, several congressmen in opposing the bill quoted directly from *The Journal's* editorials to indicate the attitude of the Medical profession. The *Journal* believes that its opposition had much to do with the modification of the original Senate bill to the bill which finally passed—a bill which resembled in name only the original Sheppard-Towner bill and which is less objectionable. The bill as finally passed, it should be remembered, is merely an appropriation act and makes it optional with the individual states to accept federal funds made available by it.—*Jour. A. M. A.*, Feb. 11, 1922.

[1]President Harding in his Annual Message to Congress, April 12, 1921, says: "In the realms of education, public health, sanitation, conditions of workers in industry, child welfare, proper improvement and recreation, elimination of social vice, and many other subjects, the Government has already taken a considerable range of activities. I assume that the maternity bill, already strongly approved, will be enacted promptly, thus adding to our manifestations of human interests."

APPARATUS FOR WITHDRAWING SPINAL FLUID WITHOUT POSTPUNCTURE REACTION.

Randal Hoyt, New York (*Journal A. M. A.*, February 11, 1922), uses a needle within a needle. The outer needle is the ordinary type of lumbar puncture needle, within which the inner needle accurately fits, and beyond which it extends as a fine point, for about a quarter of an inch (6 mm.) The proximal end of the outer needle is arranged as a fitting for a Luer syringe, whereas the proximal end of the inner needle is arranged for a record syringe. To use this apparatus, lumbar puncture is made in the usual way, up to the point of piercing the dura. At this point, the obturator of the needle is removed, the inner needle— with a 10 c. c. record syringe attached—is introduced into its place, and thrust forward to its full extent, so as to pierce the dura, which it is enabled to do on account of its extra length. The spinal fluid is then withdrawn into the syringe, and if spinal treatment is to be given this is injected by means of a second syringe. To remove the apparatus, the inner needle is first withdrawn, and then the outer needle.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

Clinical Examination of the Nervous System. By G. H. Monrad-Krohn, Lecturer in Neurology at the Royal Frederick University, Christiania. New York: Paul B. Hoeber, Publisher. 1922. Price, $2.00.

Ringworm, and Its Successful Treatment. By John P. Turner, M. D. Illustrated by 8 half-tone engravings. Philadelphia: F. A. Davis Co. 1921. Price, $1.00.

The Practical Medicine Series. (Comprising 8 volumes on the year's progress in medicine and surgery.) Vol. I. Series 1921. **General Medicine.** Edited by Frank Billings, M. D., and Burrell O. Raulston, M. D. Chicago: The Year Book Publishers. Price, $2.50.

Motherhood. By H. W. Long, M. D. Boston: Richard G. Badger, The Gorham Press. Price, $3.00.

Nostrums and Quackery By Arthur J. Cramp, M. D., Director of the Propaganda Dept., Journal of the A. M. A. Vol. II. Chicago. 1921.

Transactions of the College of Physicians of Philadelphia. Third series. Vol. 42.

Diseases of Children. By Herman B. Scheffield, M. D. 238 illustrations. 9 colored plates. St. Louis: C. V. Mosby Co. Price, $9.00.

Ephraim McDowell—"Father of Ovariotomy" and Founder of Abdominal Surgery. With an Appendix on Jane Todd Crawford. By August Scnachner, M. D., Louisville, Ky. Octavo volume of 350 pp. Illustrated. Philadelphia and London: J. B. Lippincott Co. Price, $5.00.

Epidemiology and Public Health. In three volumes. By Victor C. Vaughan, M. D., LL. D. Vol. I—Respiratory Infections. 688 pp. St. Louis: C. V. Mosby Co. 1922. Price, $9.00.

Clinical Diagnosis. By Charles Phillips Emerson, A. B., M. D. 5th edition. 156 illustrations. Philadelphia & London: J. B. Lippincott Co..

Physical Diagnosis. By W. D. Rose, M. D. 2nd edition. 736 pp. 309 illustrations. St. Louis: C. V. Mosby Co. 1921. Price, $8.50.

Prostitution in the United States. Vol. I. Prior to the Entrance of the U. S. into the World War. By Henry B. Woolston, Ph. D. New York: The Century Co., and the Bureau of Social Hygiene. 1921. Price, $2.50.

Benign Stupors—A Study of a Pneumanic-Depressive Reaction Type. By August Hoch, M. D. 284 pp. New York: The MacMillan Co. 1921. Price, $2.50.

Bacteriology. By Estelle D. Buchanan, M. S., and Robert Earl Buchanan, Ph. D. Revised edition. New York: The MacMillan Co. 1921.

The Unconscious. By Morton Prince, M. D., LL. D. Second edition, revised. New York: The MacMillan Co. 1921.

Social Aspects of the Treatment of the Insane. By John A. Goldberg, Ph. D., Columbia University, New York. New York: Longmans, Green & Co. 1921. Price, $2.50.

Pitfalls. By A. J. Caffrey, M. D., Milwaukee. Boston: Richard G. Badger: The Gorham Press. 1921. Price, $2.00.

Suggestion and Auto-Suggestion. By Charles Boudonin, Professor at the Jean-Jacques Rousseau Institute. New York: Dodd, Mead & Co. 1921.

Vice and Health. By John Clarence Funk, M. A., LL. B. 174 pp. Philadelphia and London: J. B. Lippincott Co. 1921. Price, $1.50.

Essentials of Laboratory Diagnosis. Designed for students and practitioners. By Francis Ashley Faught, M. D., formerly Director of the Laboratory of the Department of Clinical Medicine and Assistant to the Professor of Clinical Medicine, Medico-Chirurgical College, etc., Philadelphia, Pa. Eleven full-page plates (four in colors) and seventy-eight text engravings. Seventh Revised and Enlarged Edition. F. A. Davis Company, Publishers, Philadelphia, Pa. 1921. Price, $4.50.

Papers from the Mayo Foundation For Medical Education and Research and the Graduate School of Medicine of the Univ. of Minn., covering the period of 1915-1920. 695 pp., 203 illustrations. Philadelphia and London: W. B. Saunders Co. 1921. Price, $10.00.

A Textbook of Physiology: For Medical Students and Physicians. By Wm. H. Howell, Ph. D., M. D., Prof. Physiology, Johns Hopkins Univ. 8th edition, thoroughly revised. 1053 pp. 308 illustrations. Philadelphia and London: W. B. Saunders Co. 1921. Cloth, $6.50.

A Textbook of General Bacteriology. By Edwin O. Jordan, Ph. D., Prof. Bacteriology, Univ. Chicago, and Rush Medical College. 7th edition, revised. 744 pp., illustrated. Philadelphia and London: W. B. Saunders Co. 1921. Cloth, $5.00 net.

Diseases of the Skin and the Eruptive Fevers. By Jay F. Schamberg, M. D., Prof. Dermatology and Syphilis, Univ. Pa. 4th edition, revised. 626 pp., 265 illustrations. Philadelphia and London: W. B. Saunders Co. 1921. Cloth, $5.00 net.

Clinical Tuberculosis. By Francis Marion Pottenger. Chapter on Laboratory Methods by Jos. E. Pottenger. In two volumes. 1400 pp. 170 illus., 10 color plates and charts. 2nd edition. St. Louis: C. V. Mosby Co. Price, $15.00.

Clinical Electrocardiography. By Frederick A. Willius, M. D. Section on Clinical Electrocardiography, The Mayo Clinic, Rochester, Minn., and the Mayo Foundation. 188 pp. 185 illus. Philadelphia and London: W. B. Saunders Co. 1922. Cloth, $5.00.

The Life of Jacob Henle. By Victor Robinson, M. D. New York: The Medical Life Co., 12 Mt. Morris Park, W. Price, $3.00.

Neoplastic Diseases. A treatise on Tumors. By James Ewing, M. D., Sc. D., Prof. Pathology, Cornell Univ. 2nd edition, revised and enlarged. 1054 pp. 514 illus. Philadelphia and London: W. B. Saunders Co. 1922. Cloth. $12.00.

Infant Feeding. By Clifford G. Grulee, M. D., LL. D., Associate Prof. Pediatrics, Rush Medical College. 4th edition, revised. 397 pp., illustrated. Philadelphia and London: W. B. Saunders Co. 1922. Cloth, $4.50.

Psychoanalysis: Its Theories and Practical Application. By A. A. Brill, Ph. D., M. D. Lecturer on Psychoanalysis and Abnormal Psychology, New York Univ. 3d edition, revised. 468 pp. Philadelphia and London: W. B. Saunders Co. 1922. Cloth, $5.00.

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American Illustrated Medical Dictionary (Dorland). 11th edition, revised and enlarged. Edited by W. A. Newman Dorland, M. D. 1229 pp., 338 illus., 141 in colors. Containing over 1500 new terms. Philadelphia and London: W. B. Saunders Co. 1921. Flexible leather, $7.00 net; thumb index, $8.00 net.

The Mechanics of the Digestive Tract. By Walter C. Alvarez, M. D. 192 pp., 22 illus. New York: Paul B. Hoeber. Price, $3.50.

An Essay on the Physiology of Mind. By Francis X. Dercum, M. D., Ph. D., Prof. Nervous and Mental Diseases, Jefferson Medical College, Philadelphia. 150 pp. Philadelphia and London: W. B. Saunders Co. 1922. Cloth, $1.75.

Abdominal Pain. By Prof. Dr. Norbert Ortner, Chief of Medical Clinic, Univ. Pa. New York: The Rebman Co. 1922.

The Practical Medicine Series. Vol. V. **Gynecology,** edited by John C. Dudley. **Obstetrics,** edited by Jos. E. DeLee. Series 1921. Chicago: The Year Book Publishers. Price, $1.75. Price of series of eight volumes, $12.00.

South America—From a Surgeon's Point of View. By Franklin H. Martin, C. M. G., M. D., F. A. C. S., Director-General of American College of Surgeons. Introduction by Wm. J. Mayo. Chicago: Fleming H. Revel Co. 1922.

BOOK REVIEWS

A Text-book of Physiology: For Medical Students and Physicians. By William H. Howell, Ph.D., M.D., Professor of Physiology, Johns Hopkins University, Baltimore. Eighth Edition, Thoroughly Revised. Octavo of 1053 pages, 308 illustrations. W. B. Saunders Company, Philadelphia and London. 1921. Cloth, $6.50.

The first edition of Dr. Howell's excellent textbook on physiology was brought out in 1905 and has been reprinted many times as the result of its popular reception. The last edition appeared three years ago and since that time, while there have been no fundamental changes or epic making discoveries, there has been the usual shifting in points of view as the knowledge of physiology has widened. In presenting the new edition, Dr. Howell has followed and interpreted these changing phases and has thus kept the book in touch with current progress. Some new figures have been added and an effort has been made to emphasize the hygienic application of physiology. As usual, it is a splendid text, admirably arranged and the simplicity and lucidity in the presentation of physiologic facts and theories makes it a most valuable text for the medical student or the practitioner.

Papers From the Mayo Foundation. For Medical Education and Research and the Graduate School of Medicine of the University of Minnesota, covering the period of 1915-1920. Octavo volume of 695 pages with 203 illustrations. W. B. Saunders Company, Philadelphia and London. 1921. Cloth, $10.00 net.

The publication of papers from the Mayo Foundation, the graduate school of the University of Minnesota, will be welcomed by both clinicians and investigators. Subsequent volumes will contain continuations of many of the studies published in this first issue and will also contain studies participated in by many different individuals. It is planned that the volumes from year to year will present detailed studies, principally by the younger members of the staff, of the clinical material available at the Mayo Clinic and in the hospital controlled by the medical school of the University of Minnesota. The subject matter will be confined to the sources indicated, with the occasional addition of contributions from members of the faculty on subjects which are related to those discussed by graduate students.

The School is living up to its obligations in making available the results of these investigations. Nearly all of the papers published were originally in the form of theses presented by graduate students and are published either in full or in abstract. In addition, the volume contains papers prepared by medical students which were not presented as theses.

The work is divided into ten general divisions, namely, Alimentary Tract; Urogenital organs; Ductless Glands, Circulatory Organs; Blood; Skin and Syphilis; the Nervous System; Head, Trunk and Extremities; Metabolism, and General. It is the beginning of what promises to be a most important annual contribution to medical literature.

A Text-book of General Bacteriology. By Edwin O. Jordan, Ph. D., Professor of Bacteriology in the University of Chicago and in the Rush Medical College. Seventh Edition thoroughly revised. Octavo of 744 pages, fully illustrated. W. B. Saunders Company, Philadelphia and London. 1921. Cloth, $5.00 net.

In presenting the seventh edition of his text on General Bacteriology, Dr. Jordan has entirely rewritten the chapters on influenza and anaerobes and has extensively revised the chapters on streptococci, pneumococci and typhus fever. Important additions have also been made to the subjects of immunity and yellow fever. The chapter on methods of studying bacteria has been entirely rewritten and considerably enlarged.

Dr. Jordan's text has previously been praised by this Journal. The large number of Rush graduates in Wisconsin will need no assurance as to the excellence of the work, which is the outgrowth of lectures given students in the University of Chicago. It is hoped, however, that this review will be an assurance to those not familiar with the excellent teaching methods of the author.

The Life of Jacob Henle. By Victor Robinson, M. D. The Medical Life Company, 12 Mt. Morris Park. W., New York City. Price $3.00.

Dr. Robinson has added another member to his family of medico-historical writings, the present volume having been preceded by an "Essay on Hasheesh," "Pathfinders in Medicine," the "Don Quixote of Psychiatry," and "Pioneers of Birth Control." The newest member of the family appears beautifully garbed in a most attractive art binding, printed on art paper and the edition is limited to 500 copies. It is a most interesting biography cleverly writen of a most interesting medical character and those fortunate enough to secure a copy of this limited edition will be well repaid.

The Wisconsin Medical Journal

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ORIGINAL ARTICLES.

SOME ASPECTS OF THE LOCAL ANESTHESIA PROBLEM.*

BY ROBERT EMMETT FARR, M. D.

The problem of anesthesia, which bears such a close relation to surgery, while not as important as some of the other features, still has considerable bearing upon the outcome in a large percentage of surgical cases, and may be the deciding factor between life and death in a small percentage at least. In an even greater percentage of cases anesthesia probably affects the morbidity. The relation of anesthesia to the patient's comfort, while not so important as the two foregoing considerations, is well worth our attention and, if by any means we may be able to overcome or reduce the disagreeableness connected with the undergoing of a surgical operation such an accomplishment would be worth almost any effort.

Of course safety is the first consideration, and in comparison with this factor all other factors become relatively insignificant. Were it not an accepted fact that local anesthesia offers to the surgical patient greater safety than does general anesthesia there would be less reason for advocating its use. The margin of safety of local over general anesthesia is clear cut and definite. Local anesthesia is not only more safe immediately, but remotely as well. While in the hands of experts both methods are relatively safe as far as immediate mortality is concerned, the remote consequences of general anesthesia are much more to be dreaded than are those of local anesthesia, and the poorer the training of the anesthetist the more likely is this to be the case. The realization of this fact has for many years relegated to the local anesthetist the desperate cases. Furthermore, surgeons are now beginning to realize that cases which in their judgment could not withstand general anesthesia and survive, may be operated upon in emergency under local anesthesia, without suffering the depressing effects of general anesthesia which might prove fatal. Indeed the action of local anesthetics has been found stimulating to a degree which will actually bring a patient through a critical operation in an apparently improved condition. The stimulating effect of the solution used is often so great as to deceive one for the time being, and until after the effects of the drug have worn off, one may not realize how hopeless the case is. In order to compete with local anesthesia in regard to the element of safety, general anesthesia must be administered in a most expert manner, and until the training of experts in the use of general anesthesia becomes more widespread the difference in effect of the two methods must remain comparatively great.

If this is true as regards the immediate effect, it is, to a much greater extent true as regards the late results and complications. This relates not only to the question of morbid processes which develop directly as a result of the anesthesia, but to those which develop on account of a depression of the vital forces as well. Depletion of the patient is perhaps much more often the cause of the development of complications than is realized. Extensive hemorrhage, trauma and shock are undoubtedly important etiological factors in the development of the complications which follow surgical operations, and general anesthesia invites the conditions which bring this about to a greater degree than does local. It will be admitted I think, that provided a satisfactory operation can be performed under local anesthesia the probabilities of hemorrhage, traumatization of the tissues and shock will be reduced. The main drawback which has presented itself has been due to the fact that the belief has been widespread that the performance of major operations under local anesthesia could not be accomplished with satisfaction. The mental attitude of the patient, inability to eliminate pain, the necessity for curtailing to some extent the operative procedure, the division of the surgeon's attention between the operation proper and the patient's mentality, the so-called technical difficulties, the element of time, and a host of

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other objections have been presented as reasons why local anesthesia is unsatisfactory in major surgery.

Unquestionably for a time at least, the mental attitude of the patient will furnish a logical objection to the use of local anesthesia in some cases. Aside from a few unreasoning individuals who will always want to become unconscious when undergoing a surgical operation, and who would be much better off if unconscious when undergoing many of the unpleasant ordeals which come to most of us, the cause of psychic incompatibility is largely a matter of training. It is a well known fact that psychic incompatibility subsides as faith increases, and that patients accept with great composure and fortitude the routine procedure which is carried out in the clinic in which they have faith. It has been amply proven that in clinics in which local anesthesia has been successfully employed psychic incompatibility is unusual, even though on all sides the overwhelming sentiment—a sentiment which only too readily reaches the prospective patient—is against the use of local anesthesia. Should the use of local anesthesia become widespread, and painless operations without the loss of consciousness become the rule rather than the exception, faith would effectually take care of the question of psychic incompatibility.

The prevention of pain is largely a matter of technic. This technic relates not only to the induction of anesthesia, but to the method of carrying out the surgical procedure as well. I shall refer to this matter later, but in this connection I wish to state that perhaps the greatest factor inhibiting the more extensive use of local anesthesia is the effect upon the lay, as well as the medical mind, resulting from the enforcement upon the hapless patient of a painful surgical procedure under the guise of local anesthesia.

There is no denying the fact that the exclusive use of local anesthesia would make it necessary to greatly curtail many operative procedures. The scope must necessarily depend upon the training of the individual and no operation should be carried through under local anesthesia unless it can be done with facility, dispatch and completeness. The excellence of mixed anesthesia has been so well demonstrated by Crile and others, that inhalation anesthesia may and should be employed without hesitation should the surgeon find himself unable to meet the indications by the use of local anesthesia alone.

The distraction of the surgeon's mind from the operation proper is one of the so-called disadvantages which may be dispensed with with little consideration. This factor is simply a matter of training and experience. As a rule the local anesthetist who performs his work properly finds it necessary to give less attention to the mentality of the patient than to any one of a number of other factors in the operating room.

The surgeon who is unable to divide his attention between his patient and other distracting influences in the operating room must, of course, eliminate as many of these distractions as possible. It is impossible for some surgeons to muster sufficient poise to allow them to operate and teach students and demonstrate at the same time. Others are unable to divide their attention between the operative procedure and visiting physicians and nurses who may happen into the operating room. Ordinarily, however, the individual who has sufficient poise and balance to meet the exigencies of major surgery should have little difficulty in meeting any demand that local anesthesia will make upon him in this regard.

As stated, the scope of local anesthesia must depend largely upon the technical skill and training of those who employ it. One may ask for instance, "How far can a man jump?" The best answer is, "Show me the man." The method must be judged by its best fruit. Many things are possible with the use of local anesthesia, and it must remain largely a question of the judgment of the individual operator as to whether or not it is worth while to develop the technical skill required for its successful use. There are three attitudes which one may take toward this proposition. One may decide that the advantages are sufficiently great to merit the time and labor invested in the necessary training. One may, on the other hand feel that the advantages are not sufficiently great to repay one for the necessary expenditure of effort. And again there will always be those who while they feel that the return clearly justifies the expenditure of effort, will at the same time decide that notwithstanding this fact, it would be better to "let George do it."

The technical difficulties connected with the use of local anesthesia, while somewhat disturbing in the past, are in the present day more easily

overcome and objection on this account ought not to be taken too seriously. In almost any large city and in many of the smaller cities and towns one may find individuals performing operations under local anesthesia with sufficient frequency to allow the general technical points to be readily grasped. A knowledge of anatomy, especially that of the sensory nervous system, is not difficult to acquire and should be fairly well instilled in the mind of everyone essaying to do surgery. The splendid equipment which is now available also reduces the technical difficulties considerably. The greatest barrier to be overcome relates to the development of a surgical technic which is sufficiently refined to permit one to carry out operations with facility under this method. Strategy must be developed to meet difficult technical procedures which do not present or which can be much more easily overcome when using general anesthesia.

The element of time has been advanced by many as a reason why the use of local anesthesia is unsatisfactory. The best answer to this objection would be to place the facts before the patient who after all is the court of last resort. Let him decide whether or not he wishes an operation performed under general anesthesia because the surgeon has not the extra time to contribute even though it is admitted that the same operation would be more safe under local anesthesia. Admitting that the time element is of great importance, yet experience shows that where local anesthesia is used more or less routinely the element of time becomes relatively unimportant. With proper equipment anesthesia may be established in less than five minutes, and in many of the simpler operations appendectomy, hysteropexy, thyroidectomy, hemorrhoidectomy, herniotomy, etcetera—the total time required for anesthesia combined with operation is not greater under local than under general anesthesia. However, an acceptance of the motto "not how much, but how well" effectually answers the objections in relation to time.

The acceptance of local anesthesia at the hands of the surgical profession will depend to a certain extent upon the methods employed by those who have chosen to use this form of anesthesia to an extended degree. It is probable that the methods employed in the past have been too highly technical and complicated to be easily acquired, and readily adopted. Thus the adoption of regional anesthesia has been slow, while the use of infiltration anesthesia has been received by a gradually increasing number of surgeons. We have favored the direct infiltration and infiltration block over the regional method wherever the former could be employed. Direct infiltration has the merit of simplicity, the solution being brought into contact with the ultimate arborizations of the nerves and resulting in immediate action. The margin of error is almost nil. On the other hand regional anesthesia demands the localization of sensory nerve fibers and a fairly high degree of technical skill. It admits of a considerable margin of error. Sufficient experience has demonstrated that when safeguarded by the use of adrenalin or the tourniquet, enough novocain solution may be employed safely as a direct infiltration to produce anesthesia in any case in which local anesthesia is applicable. Experience also proves that the injection of novocain dissolved in Ringer's Solution and combined with a proper proportion of adrenalin, does not devitalize the tissues or in any appreciable degree handicap their healing propensities. We, therefore, reserve the use of regional anesthesia for special indications. Where its simplicity outranks that of infiltration, as in brachial, intercostal and occasionally in lower limb operations, it is the method of choice. In working upon the neck and the face, it is employed in combination with infiltration. One of the objections to the use of infiltration is that the edematization of the tissues may interfere with proper identification. For this reason infiltration block rather than infiltration, is used in hernia operations. In plastics, symmetrical edematization, resulting from an infiltration of the tissues will, in many instances improve the opportunity for careful apposition of the layers, rather than interfere with the same, as is generally thought to be the case. Thus, during recent years most of our plastic work has been done under local anesthesia, especially hare lip, even in children and cleft palate in the adult. Wolff and Thiersch grafts, pedicle flaps and bone graft operations have all been performed under the use of infiltration anesthesia. Even the small operation of circumsion is facilitated by the edematization of the tissues and local anesthesia is employed here in order to facilitate the operation even though general anesthesia has been given.

Hertzler and others have stated that the after-pain in tissues in which local anesthesia has been used is greater than it is in tissues which have not been edematized. Our experience does not substantiate these findings. In approximately one hundred and fifty dual operations in which general anesthesia was used, novocain solution was injected into the tissues of one side, but unfortunately careful records were not kept of the post-operative findings. It was so unusual however, for the patients to complain of greater pain upon the side in which novocain had been injected, that, until the appearance of Hertzler's article, there was no question in my mind regarding this point. Since the appearance of this article, we have not had a sufficient number of dual operations under general anesthesia to test the method with satisfaction.

In abdominal work, splanchnic and sacral anesthesia have been found to be valuable adjuncts and have greatly broadened the field of local anesthesia in this region. In bladder, urethral and prostatic work, sacral anesthesia plus suprapubic infiltration gives complete anesthesia in practically one hundred percent of cases. We have had some disturbing reactions following the use of sacral anesthesia, although nothing serious has occurred. Two patients have had convulsions of a mild degree, with rapid pulse, nausea and vomiting. Since the more slow introduction of the solution has been practised, however we have seen little trouble from this source.

Practically all fractures and dislocations have been reduced under the local method, not excepting those occurring in children. During the past year I have performed an open operation for malunited fracture at the upper third of the femur in a boy of six under local anesthesia, although I was compelled to present him with five dollars in order to keep him from crying.

One of the most gratifying observations that we have made is the facility with which children may be operated upon under the use of local anesthesia. We have in over one hundred instances operated upon children under ten years of age for a wide variety of conditions and in less than ten percent have we been compelled to administer mixed anesthesia.

The prime essentials for the successful use of local anesthesia as they present themselves to me, are as follows:

From the time of the first visit of the patient no effort should be spared in attempting to look after his interests. All who come in contact with the patient must aid in this endeavor. In this regard local anesthesia is demanding only what the best interests of the patient demand.

The assurance of a good night's rest in all routine cases, using drugs in sufficiently large doses to make the margin of error as small as possible. Veronal is our choice for this purpose.

Judicious preliminary medication, designed to reduce the apprehension of the patient, in accordance with the demands of each. Of the drugs available none have given us as great satisfaction as has the synergistic use of morphin, combined with magnesium sulphate, as recommended by Gwathmey.

Careful handling of the patient during the trip to and from the operating room and scrupulous care in looking after his physical and mental comfort in matters that do not relate directly to the operation proper.

Rapid, painless introduction of the solution, with sufficient thoroughness for the establishment of anesthesia so that the performance of the operation may be completed without embarrassment.

The most accurate diagnosis possible, proper placing of incisions, careful retraction, and the avoidance of trauma, especially traction.

The use of strategy and a refined technic when operating, tilting of the table, vertical retraction, good exposure and sharp dissection.

The performance of operations wherever possible without dislocating the organs.

The presence of a good psycho-anesthetist, who is possessed of tact and judgment, to aid in the elimination of psychic incompatibility.

The use of a phonograph in or near the operating room, referred to so frequently as a fad but which has been found to be of exceptional benefit in many instances as a means of diversion during the operation.

CHRONIC SCLEROSING OSTEOMYELITIS.

Arthur D. Kurtz, Philadelphia *Journal A. M. A.*, February 4, 1922), reports a case of sclerosing osteomyelitis. There had been no trauma; but there was a history of many acute infections and one site of focal infection. The marrow cavity was completely obliterated except for a negligible area.

A CONSIDERATION OF TWO COMMON TYPES OF CARDIAC ARRHYTHMIA.*

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As an introduction to the study of certain types of cardiac function it will be well for us to consider briefly the theories which are at present in vogue as to the mechanism of cardiac activity.

Up to a few years ago it was generally held that the origin and regulation of the heart beat was located in some part of the nervous system. The discovery that contraction of the skeletal muscles had its origin in the central nervous system made it seem probable that the contraction of the heart was the result of a stimulus arising in the central nervous system and conveyed to the heart through some nerve fibers. This, briefly, was the "neurogenic theory." The important point in which this theory differs from the one at present accepted is that in it the muscle cells of the heart are believed to play only a passive part. Indeed, it makes their activity directly dependent on the activity of the intracardiac nervous tissue.

Later advances in the physiology of the heart have brought us to the point of considering the source of the rhythmical movement as lying in the heart muscle itself. This theory, now accepted, is known as the "myogenic theory of origin of the heart beat." Accordingly, we now believe that the stimulus arises not in a nervous center, but in the muscle cells of the heart itself, and is conveyed to the successive portions of the heart not by the nerve fibrils, but by the specialized contractile tissues themselves.

The muscle cells of the heart have been found to possess five properties, viz., (1) stimulus production; (2) stimulus conduction; (3) excitability; (44) contractility; (5) tonicity. The cooperation of the first four of these properties is the means through which rhythmical movements of the heart are initiated and maintained, even when the heart is removed from the body.

STIMULUS PRODUCTION.

The nature of the stimulus is not yet definitely settled. There is considerable evidence indicating that it is a stimulus material—a chemical compound, the constitutents of which are not yet determined. It seems that this stimulus material is being continuously manufactured and consists of molecules which constantly increase in size and complexity until finally they become so complex that they break down, an unstable compound if you please, and are suddenly decomposed into the constitutent ions. All the stimulus material in existence at this particular moment is destroyed, but immediately its formation is recommenced. This continuous formation of stimulus material with its automatic periods of dissociation constitutes the basis of the rhythmic stimulation of the heart. This property, i.e., the manufacture of stimulus material, is a function of the muscle cells of the heart but most particularly of that highly specialized region around the junction of the superior cava and right auricle. This portion is known as the sinus node and it sets the rhythmical pace of the normal heart. The stimulus passes from the pacemaker to the successive portions of the heart causing in turn successive contractions. Under certain pathological conditions parts of the heart other than the sinus node may have this property heightened, and these parts may, through this process, become the pacemaker for the whole heart.

Excitability is that property of cardiac muscle by virtue of which it responds to stimuli. It may be heightened or depressed. Each contraction of the heart temporarily destroys the irritability of the muscle cells. Increase in excitability tends to shorten the cardiac cycle, thereby increasing the rate.

Conductivity. It was formerly believed that the conduction of stimuli to the various portions of the heart was carried on exclusively by the intrinsic nerves of the heart wall. Today we believe that the function of conductivity is a property of the muscle cells of the heart wall. The rate of conduction is relatively slow. It is temporarily destroyed after systole, but gradually returns after each contraction.

Contractility is that property by virtue of which the muscle cells become shortened, this in turn emptying the chambers of the heart.

Tonicity, while related to the other fundamental properties of the heart muscle, is quite distinct from them. Tonus allows the heart wall to resist stretching during diastole. Changes in tone are

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essential in order that the heart may be capable of receiving varying quantities of blood.

A study of the histology of the Mammalian heart has revealed certain special structures which have been found in different portions of the heart, and which have many features in common. These are (1) The Sinus Node, (2) The Auriculo-Ventricular Node, and (3) the Bundle of His. Anatomical and embryological evidence indicate that the sinus node is the normal pacemaker of the Mammalian heart. There is definite evidence that under pathological conditions the auriculo-ventricular node may become the pacemaker. In other pathological conditions, when the conduction path from the auricle to the ventricle is severed, the evidence is in favor of the assumption that the main trunk, or one of the branches, of the Bundle of His originates the stimuli which set the pace for the ideoventricular rhythm then established.

By the term regular heart we understand one which conforms to the rules of the normal heart, viz., (1) rate, (2) rhythm, (3) pacemaker in sinus node, (4) wave of contraction spreads over cardiac chambers in orderly sequence, while stimulus follows normal path at normal speed, and (5) uniformity in size and duration of successive systoles. Departures from the normal are often best detected by the employment of graphic methods, yet when one has become familiar with the evidence obtained by such means, physical signs are quite sufficient in the majority of cases to afford us an accurate diagnosis of the abnormality present.

THE EXTRA SYSTOLE.

In the routine examination of the pulse our attention is frequently attracted by a form of irregularity having the following characteristics: A normal rhythm is more or less occasionally interrupted by a pause during which one may get the impression that a beat has been "dropped", an intermittent pulse. Possibly, when we pay very close attention, we find that the beat was not dropped at all, and we are able to detect on delicate palpation a small pulse wave which at first had been missed. This wave probably is much smaller than the waves of the normal rhythm. It occurs slightly early, and is followed by a pause slightly longer than that following the normal pulse waves. Auscultating such a heart we will detect a normal rhythmic series of sounds interrupted occasionally by a group of sounds which are weaker, and occur earlier, than those of the normal cycle. These sounds of the weak cycle then are followed by a pause of longer duration than the normal diastolic period. In some of the hearts this extra systolic contraction will be represented by a single sound only, and no corresponding wave at all can be detected in the peripheral arteries. These signs indicate that the premature beat failed of sufficient force to open the aortic valve. If murmurs are present during the period of normal rhythm, they are much less distinct in the premature cycle, and may be absent. Another type of rhythm which is easily recognized as due to extra systoles is the so-called bigeminus. Here the radial pulse reveals a rhythmic series of coupled beats—a large pulse wave with a short pause followed by a short wave with a long pause. This sequence is repeated again and again. When an extra systole occurs every third beat it gives rise to the pulse commonly called trigeminus. When extra systoles occur quite frequently, and at very irregular intervals, it is sometimes more difficult to assure oneself, by the ordinary physical signs, that the arrhythmia is due to premature contractions (extra systoles). At this time it may be necessary to make a certain diagnosis using an electrocardiogram. Inspection of the venous pulse (jugular) is frequently of use in establishing the diagnosis in these cases. The two venous waves which one ordinarily sees during a fundamental rhythm are often replaced at the time of the premature contraction by a single large venous wave. The patient's sensations are often a very important aid to establishing a diagnosis. Some individuals are quite unaware of the irregular action; others are conscious of the pause; while others are distressed by the big beat that follows the pause. Some have a transient sensation of fullness in the region of the heart, while still others experience a feeling of suffocation in the throat. Frequently they describe a sensation something as follows: "Doctor, my heart occasionally gives a big jump, seems to turn over on itself, pause for some seconds, falls back into its normal place and beats again naturally."

TREATMENT OF EXTRA SYSTOLES.

The frequency of premature contractions in persons with nervous instability and without demonstrable evidence of organic heart disease definitely establishes a neurogenic origin. The over-

indulgence in tea, coffee, alcoholic liquors and tobacco in some persons increases cardiac irritability sufficiently to produce this arrhythmia. Here lies our cue in the treatment of these cases—total omission of, or reduction in the amounts of these stimulants used. Another source of the increased myocardial irritability expressed by extra systoles is an abnormal condition of the gastro-intestinal tract. Whether such digestive disturbances act by producing substances which are direct toxins to the heart muscle, or by purely reflex nervous influence, is not known, but it seems clear that in a certain number of cases the extra systoles will disappear upon correction of the gastrointestinal disorder.

A distinction should be made between extra systoles which are associated with other evidence of myocardial damage, and those which occur as the sole evidence of disturbances of heart function. In the former case, therapy should be directed toward a correction of the more fundamental cardiac defect, and frequently the extra systoles will become less evident with improvement of other features. These are the only cases, revealing extra systoles, in which we are justified in using digitalis, and it should be used with extreme care, under close surveillance. Oftentimes it will increase the irritability out of all proportion to its otherwise beneficial effects. To repeat, in those in whom extra systoles are the only sign of abnormal cardiac activity, digitalis is contraindicated, and they are often made more frequent by its administration. These patients should be told that they have no serious heart lesion, they should not be limited in their physical activities, and, provided they are leading a sedentary life, they should be induced to take regular exercise in the fresh air. I know of no drug which will directly improve this cardiac condition, although bromides are frequently of value, particularly to relieve the patient of anxiety. The patient's mind should be put at rest and he should be reassured. My impression is that by allowing extra systoles to go unchecked, the abnormal focus in the myocardium acquires more and more of a habit, of assuming the role of pacemaker for the heart, and this, if uncontrolled, may lead to the establishment of more serious abnormalities of rhythm.

AURICULAR FIBRILLATION.

The group of individuals which we shall now consider is characterized by a complete irregularity of the pulse. Waves of varying size, large and small, separated by intervals, long and short, follow each other in the most confused succession. The pulse is absolutely devoid of any fundamental rhythm. As a rule the stronger beats follow the longer pauses, but the disorderly sequence of large and small pulse waves, separated by intervals long and short, allows us to make a strong conjecture as to the nature of abnormal cardiac activity with which we are dealing. There are other cases in which the complete irregularity is not so easily detected by palpation. When the pulse pressure is low, the recognition of the unequal size of the waves may be quite difficult. There are certain types of individuals with fibrillating auricles revealing pulse rates between 70-80, and with the waves placed at such relatively even intervals that an accurate diagnosis can only be established by graphic methods. Before going farther, we should emphasize the point that while practically every case of auricular fibrillation is characterized by a pulse of complete irregularity, there are other conditions which may also afford a completely irregular pulse, and which can only be differentiated by exact instrumental methods. One of these we have previously taken up, viz., frequently recurring extra systoles arising in various foci in the ventricular musculature. Often the heart beats in auricular fibrillation are far more numerous than the arterial pulsations, some contractions are too feeble to perceptibly increase the lumen of the radial artery, and others fail even to open the aortic valve. These latter are merely represented by a first heart sound. Only those pulse waves which are of considerable volume and force can be felt at the wrist, and many small ventricular contractions expend their force before reaching the radial artery. These small contractions are ineffectual in maintaining the circulation, yet are exhausting to the heart muscle. We have existing then, if you please, a "Pulse Deficit," i.e., a difference between the number of cardiac contractions, and the number of impulses which can be palpated in the radial artery. On auscultation the heart reveals the same degree of irregularity, and indeed the absolute irregularity is made more apparent than by palpating the radial pulse. When there are murmurs due to mitral or tricuspid stenosis, the presystolic murmurs disappear with the onset of auricular fibrillation, while the diastolic remain.

Many people become conscious of the heart's action when it departs from its normal rhythm. With auricular fibrillation individuals frequently complain of a fluttering sensation referred to the heart. This is not continuous usually, but is interrupted by thumping sensations due to the occasional occurrence of larger beats. More frequent dyspnoea or edema are the symptoms which bring these individuals to the physician. Very few of them complain of anginal pains.

THE TREATMENT OF AURICULAR FIBRILLATION.

In the treatment of auricular fibrillation it must be born in mind that in this condition we have myriads of stimuli arising in the walls of the auricle. The ventricle is responding probably to many more of these than it should, and a large proportion of these responses result in frustrate beats. In other words we have a pulse deficit. The ventricle beating in this way eventually becomes fatigued, while the circulation is not furthered; indeed, dyspnoea, edema and other signs of cardiac failure may, and usually do, ensue. As far as therapy is concerned, we have almost a specific in digitalis. This drug, when given in sufficient quantity, blocks off many of the stimuli arising in the fibrillating auricle. This in turn slows the ventricular rate, reducing or eliminating entirely the frustrate contractions. As a result of proper digitalis medication the remaining ventricular beats are strengthened, the pulse deficit reduced, and generally the dyspnoea and edema clear. The one point to be born in mind is that you must give enough digitalis to get results, and then follow with supportive doses. Provided the patient has not been receiving digitalis immediately before, I prefer to give maximal doses, using the Tincture. Actually the dose is 1 c.c. per 10 lb. of body weight, this to be given in the following manner: One half the total dose immediately, one-quarter in six hours, and one-quarter again in six hours. That is, suppose a patient were to weigh 160 lb. This would entitle him to 16 c.c. of the Tincture. 8c.c. would be given, let us say, at 8 A. M., 4 c.c. at 2 P. M., and 4 c.c. at 8 P. M. Cases who are to receive medication in this nature have to be watched carefully. They should by preference be in a hospital bed, although when at home this method is perfectly safe, provided the physician will see the case before each dose is given. Should nausea and vomiting intervene, or should the pulse get below 78, *stop the digitalis.* Signs of clinical improvement are (1) reduction of the pulse deficit, (2) decrease of edema and dyspnoea with (3) increased urinary output. After the last dose is given I generally allow the case to remain without further medication for 24-48 hours. At the end of this period supportive doses are indicated, these range from 15—40 minims t.i.d. The point is this: Watch the pulse deficit and clinical course. If the deficit mounts, and the heart seems to be again escaping, you need more. Rarely do the massive doses have to be repeated. Should the patient be unusually susceptible, and over digitalization ensue with reduction of the radial pulse to dangerously low limits, the ventricular rate may be quickly raised by the administration of 1/50 grain atropin sulphate subcutaneously. Occasionally you may find individuals who are unable to take the Tincture by mouth in sufficient dosage to control the fibrillation. This inability is largely due to local gastric irritation with consequent nausea and vomiting. These cases do exceedingly well on the powdered digitalis leaf, in keratinized or formalinized capsules. 2-6 gr. a day frequently will control them. However, you must be sure *that the capsules dissolve* (1) *not* in the stomach which will give nausea, and (2) *surely* in the intestine, or the digitalis effect is lost. Remember this, digitalis never cures auricular fibrillation, it merely controls the ventricular rate and allows the heart muscle to "come back." You may reduce the pulse deficit and coincidently clear the dyspnoea and edema, but unless you *continue* adequate digitalis medication, you may expect a setback sooner or later. The onset of this will depend on the amount of cardiac reserve in the individual patient.

Quite recently a considerable amount of literature has appeared concerning the use of quinidin sulphate in the treatment of auricular fibrillation. It has been used both alone, and with digitalis. From personal experience I can say that quinidin sulphate has immense value when used in cases of paroxysmal auricular fibrillation—that is, in cases which have transient attacks. Howsoever, these cases are quite rare, for generally auricular fibrillation, once established, tends to persist. In the persistent cases, and especially in those of long standing, my results both in private practice and at the Milwaukee County Hospital have been most discouraging.

In conclusion let me state this: Auricular

fibrillation probably is responsible for 60-70% of our arrhythmical decompensated hearts. This condition of affairs arises because (1) the physician either fails to recognize the type of arrhythmia or (2) more generally, he fails to give digitalis in adequate dosage. I believe that a good standard tincture is far superior to any proprietary preparation.

THE SURGERY OF INFANTILE PARALYSIS.*

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The deformities and disabilities following acute anterior poliomyelitis contribute very largely to the work of every orthopedic clinic. Not infrequently patients are admitted who have continued severely handicapped from early childhood into adolescence and beyond when proper surgical measures might years ago have relieved the disability to a very great extent. This fact has been especially impressed on the writer during the past year in connection with the work now being carried on at the Bradley Memorial Hospital at the University at Madison.

The explanation of this apparent neglect is found in the fact that in many cases restorative measures such as massage, exercises and perhaps supporting appliances are discarded too soon because the results are not sufficiently encouraging. Many such patients fall into the hands of irresponsible healers of various sorts who do not hesitate to make extravagant promises which can never be fulfilled and which serve merely to confirm the conviction of parents that nothing further can be done. The result is that with cessation of efficient treatment there occur constantly increasing deformities from disturbed muscle balance, while opportunity for possible restoration of muscle power through well-planned exercises and guarded use is lost.

It may therefore be profitable to discuss briefly some of the commoner types of functional disability following infantile paralysis and to outline methods at our disposal for their correction so that while still under proper medical supervision these measures can be held out as important aids to be used in conjunction with or after the admittedly tedious and often discouraging pre-operative period of treatment.

Since prevention is the best cure, it cannot be out of place to emphasize that a very large share of the surgery of infantile paralysis could be rendered unnecessary by early attention to prevention of deformity and avoidance of over-use of affected muscles. Deformities have their beginnings much earlier than is usually considered the case. Early signs of foot drop as well as of knee and of hip contractures are frequently encountered during the first few weeks of the disease when muscle tenderness is still marked. It is a simple matter to predict the type of deformity to be expected in an extremity from a study of the muscles involved and the degree of the paralysis and to counteract the deforming forces by suitable splints. Spinal curvatures are less readily controlled, but even here persistent, intelligent efforts will minimize deformity to striking degree. Equal in importance

FIGURE 1.
Plaster cast with devices for gradual correction of flexion contractures at hips and knees.

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to prevention of deformity is the insistance on an adequate period of rest of the neuro-muscular apparatus. Not until every trace of muscle tenderness has disappeared should exercises of any kind be begun. Sling suspension exercises are useful in the initial stages of the muscle training period, when resistance exercises and weight bearing are out of the question. The arm or leg resting in a sling suspended from a long cord is swung back and

FIGURE 2.

Extreme Pes Cavus—following infantile paralysis.

forth pendulum fashion, thus eliminating all strain of gravity or weight bearing. Later systematic muscle training should be used and this should be continued so long as there is improvement. Operative procedures should be considered only after conservative treatment is shown by careful records to be no longer efficacious in increasing muscle power.

When deformities in the shape of contractures are already present, they should be corrected before the muscle training is begun. The most frequent deformities met with are those due to shortening of the heel cords resulting in talipes equinus and contractures of the knees and hip flexors, the two latter being especially disabling. Very frequently all three deformities are associated in the same patient.

The equinus deformity, while most readily relieved by subcutaneous tenotomy of the Achilles tendon is often easily overcome by gradual extension in plaster. A cast is applied from just below the knee to the toes. A narrow section is then cut out over the front of the ankle leaving only a narrow portion over the heel to act as a hinge. By applying gentle continued force over a period of several weeks the foot is brought into full dorsal flexion. Occasionally a marked cavus deformity is found associated with equinus. This condition is best attacked by division of the contracted plantar fascia either subcutaneously or after the method of Steindler by stripping the plantar fascia from the os calcis followed by a forcible wrenching of the foot. It is often necessary to resect a wedge from the tarsus with the base upward and at the same time to transplant one or more of the toe extensor tendons to the heads of the metatarsal bones. Division of the heel cord if necessary is best postponed in such cases until a later stage because the resistance of the Achilles tendon is necessary during the forcible manipulation for correction of the cavus deformity. This type of foot is often extremely troublesome because of the tender callouses under the metatarsal arch as well as on the dorsum of the toes.

Flexion contracture of the knees calls for division of hamstring tendons only very rarely. The deformity is rather easily overcome by removing a section of plaster cast, leaving a narrow hinge on the front of the knee and applying gradual force in extension by mechanical device as shown in the slides. Convalescence is of no longer duration than would be required after operation. If

FIGURE 3.

X-ray of same case.

tenotomy is decided upon, this should always be open at least on the outer side in order to prevent injury of the peroneal nerve which lies just beneath the tendon of the biceps muscle.

For the correction of flexion deformity at the hip an operation devised by Soutter of Boston is very efficacious. This consists in transverse division of the fascia lata from the anterior superior spine to the trochanter and stripping of the contracted hip flexors and fascia from the anterior superior spine, the dissection being carried sub-periosteally both on the inside and the outside of the front of the ilium as well as along the front edge as far down as the anterior inferior spine. This allows very considerable immediate correction of the deformity. Complete correction of the deformity is again obtained by gradual extension in plaster. For this purpose a long plaster spica split across the front of the hip joint supplied with screw extension device incorporated in the cast is most useful. Lovett has his patients lie on an elevated frame with the legs hanging so that gravity is allowed to act as the extending force.

As to tendon transplantation, no attempt will be made here to do more than briefly indicate the general type of cases in which it is to be considered. The purpose of the operation in brief is to restore as far as possible a normal relation of muscle power in an extremity. The sum total of power is not increased, on the contrary there is often an unavoidable loss incidental to the re-arrangement of the mechanical forces. In well selected cases the benefit, however, in re-establishing proper lines of weight bearing and in overcoming deformity is very considerable. Wherever possible the mesotenon should be retained so that the nutrition of the transplanted tendon will not be cut off. While tendon sheaths should be utilized in order to retain the gliding mechanism wherever possible, good results may also be secured by the Lange method of tunneling the subcutaneous fat for the passage of the tendon. It is generally admitted that tendon transplantation at least in the lower extremity is used less rather than more extensively as the limitations of this procedure are better understood. Occasionally flexion contractures of the knee will be accompanied by decided knock knee deformity due to the pull of an over-acting biceps on the outer aspect of the knee. In this event an osteotomy alone would be followed by recurrence of the knock knee deformity unless the vicious pull of the biceps is counteracted. The indications will be met by osteotomy of the femur plus transplantation of the biceps into the patella thus at the same time increasing the extensor power at the knee.

It is probable that tendon transplantation in the upper extremity, especially in the forearm, will have an increasingly wide field of usefulness since the factor of weight bearing need not be reckoned with. Steindler, who has interested himself especially along this line during the past years, has developed a number of useful procedures for improvement of function in the upper extremity by

FIGURE 4.

Showing device for further gradual correction of cavus deformity after operative measures.

means of muscle transplantation. For improvement of elbow flexion both flexor and extensor groups in the forearm may be utilized by detaching them from the inner and outer condyles and making them take origin some distance above the condyles from the inner and outer intermuscular septa respectively, thereby materially increasing the leverage of these muscle groups. In connection with arthrodesis of the wrist he has found this procedure of very considerable value. Flexor plasty of the thumb to secure active opposition of the thumb, so important in grasping and of transplanting flexors of the wrist to improve extension should be kept in mind as aids in the functional improvement in selected cases.

Of fundamental importance is the preliminary correction of all deformity prior to tendon transfer. Correction of the deformity usually requires very considerable manual force, even under anesthesia. A newly transplanted muscle would be wholly unequal to the task of functioning in a new capacity and at the same time overcoming an existing deformity. The post operative treatment should

include careful muscle training, protection from strain by suitable shoeing and protective braces when necessary.

In the correction of instability at the ankle, tenodesis or conversion of the tendon of a paralyzed muscle into a ligament is often of considerable value either alone or in conjunction with muscle transplantation. The tendon is stripped of its peri-tendoneum and after thorough scarification is buried in a channel in the bone in such a way as to act as a check ligament, preventing recurrence of the deformity, thus in paralytic flat foot the anterior and posterior tibial tendons may be firmly secured in grooves prepared on the internal aspect of the tibia. The method is applicable also to paralytic club foot, to calcaneus and equinus. It is, perhaps, needless to say that no tendon should be thus utilized unless its muscle is totally paralyzed.

In cases of flail ankle where muscle transplantation is out of the question and some form of stabilizing operation is necessary, there are a number of excellent procedures to choose from to render the ankle sufficiently stable to bear weight. Amony these are the Whitman astragalectomy and the Davis horizontal transverse section. In both of these operations the essential feature is the backward displacement of the foot so that the lower end of the tibia rests farther forward on the foot at the calcaneo-tarsal joint rather than over the middle of the calcaneous, thus adding greatly to the stability. As a rule sufficient mobility remains in the ankle so that the foot can accommodate itself to slight unevenness of the ground. Arthrodesis or stiffening of the ankle joint proper has fewer advocates now than formerly because the foot is rather unwieldy and the complete loss of lateral mobility is a drawback in walking on uneven ground. In the knee, on the other hand, arthrodesis may be of great value in transforming a useless dangle leg into a reliable weight bearing extremity permitting walking without crutch or cane. This operation should not be performed until growth is practically complete, certainly not before the fourteenth or fifteenth year. The patient's social condition should be taken into consideration also. Where it is likely that the patient's occupation will be sedentary it may be better to supply a brace with lock joint securing the knee in extension and at the same time allowing flexion during sitting. Arthrodesis of the shoulder and elbow should also be kept in mind in cases of extensive paralysis of the arm muscles as a means of improving function provided there is useful movement in the hand and fingers and the scapular muscles are at least fairly well preserved. Steindler has recently employed arthrodesis for flexion contraction at the wrist with good results. The importance of wrist extension in grasping is readily demonstrated in the normal hand if one tries to take firm hold of an object during wrist flexion. With the wrist in extension a very limited degree of power in the finger flexors can be utilized to great advantage.

In conclusion it may be said that the problem of the functional reconstruction of the paralytic cripple involves not only a thorough knowledge of anatomy, but also a full appreciation of the mechanics of weight bearing and muscular action. Every case demands careful observation and study so that if surgery is decided upon a careful operative plan is worked out.

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EARLY WISCONSIN MEDICAL HISTORY.*

BY HUGH P. GREELEY, M. D.,

MADISON.

Day after day through the romantic channels of the Thousand Islands glided a multitude of birch canoes filled with hundreds of painted chieftains and young warriors of the Sauk, the Foxes and the Winnebago. Day after day they paddled homeward through Lake Ontario, Lake Erie, thence

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into the Detroit river and up to the wooded eastern shore of Lake Huron, now matching the brilliant war paint of the Indians with its gorgeous autumn foliage.

Onward they went day after day and far into the night in the light of the harvest moon, the silence broken by the dip of a thousand paddles.

Decked with the spoils of victory, the scalps of the English, and eager to boast of their prowess to their squaws and their old men, the Wisconsin tribesmen were returning home after a perilous journey of three thousand miles.

Two years before they had been led forth for the first time in history against the English and had helped repulse Braddock at the Monongahela.

[1]Now they were returning under the leadership of Charles Langlade, the Father of Wisconsin, the hero of ninety-nine battles and skirmishes, from their second expedition against the English. Under Montcalm, Fort William Henry on Lake George had fallen an easy prey to the French and Indians. The victory was complete and so little control did the French commanders have over their western allies that they were utterly powerless to prevent the frightful massacre and plundering of the English as they were capitulating.

Now as it happened the Small Pox had been raging inside the English Fort and the Indians in order to increase the number of scalps taken, exhumed the bodies of those who had died of Small Pox. By careful scalping each Englishman furnished three scalps. The consequences of this circumstance compels one to note that here was an instance when death had its sting and the grave its victory, for long before the first canoes passed the Straits of Mackinac, the dread Spectre of disease was treading close upon the heels of the Victors, and Pestilence, the paramour of war, was about to wreak her vengeance upon those flushed with the pride of conquest.

By the middle of October the following notation appears in the Baptismal records of the Jesuit Mission at Michillimackinac:

[1]"This day, the 15th of October, 1757, I privately baptized the son of Lou Oucheina, whom I buried Thursday and Kininchione, both dangerously ill. They eagerly asked for baptism and promised to get themselves instructed and to live as Christians. Both are dead.

This same day I privately baptized the son of Miskoumanitou, who desired baptism and was dangerously ill with the Small Pox.

"M. L. Lefranc, Miss. of the Society of Jesus."

Through the months of October, November and December the baptismal records are mostly of sick and dying savages and records of interments are still more numerous.

As the savages separated in groups at La Baye—short for La Baye Verte, now Green Bay—to the north, the west and the south, the disease quickly spread to their people and whole Indian villages were wiped out. One tribe lost three hundred warriors. Another tribe fled from their villages in terror, leaving half their numbers unburied behind them.

No pious New England pilgrims were in the western wilderness to bemoan the suffering and hardships which the Small Pox brought to the infant Colony and in the same breath to congratulate themselves upon the decimation of the Indian tribes as a providential interposition of God.

The French in Wisconsin were of a different character. They lived, as a rule, in harmony with the savages and being adventurers and exploiters of the country often adopted the manners and customs of the Indians. Indian blood flowed freely in the veins of the early French fur traders, and many an early settler in Wisconsin was the son or grandson of a chieftain's daughter.

Before the coming of the white man it is not positively known that the Indians ever suffered from any epidemic disease. The chief causes of death amongst them were diseases such as Malaria and Pneumonia, accidents of war and the hunt and the almost inevitable winter famine. And old age claimed many among them.

Upon the arrival of the white man the whole situation changed with incredible swiftness. The first Small Pox epidemic occurred among the Puants as early as 1660, a tribe of some 3000 or 4000 being reduced to 1200. Scarlet fever and measles claimed their thousands. Death by accident became extremely common through the introduction of rum (the Indians always becoming murderous when intoxicated) and death from old age became almost obsolete.

The worst epidemic was the one already referred to upon the return of the Sauk, the Foxes and the

[1]Parkman—"Montcalm and Wolf."

[1]Wisconsin Historical Collections—Vol. XIX.

Winnebago from the Lake Champlain Expedition of 1757. Of the nine hundred warriors that went forth with Charles Langlade, decked with ceremonial paint, fully two-thirds perished miserably on their return.

Another severe epidemic in 1788, occuring as it did in a period of extreme hostility to the English, saved the latter from virtual annihilation in the Wisconsin region because it killed so many of the young warriors, that any aggressive warfare was rendered impossible.

Each new generation of Indians was attacked in turn by one of these epidemic diseases, invariably virulent and terrible among the savage races. Small pox and measles worked greater havoc than powder and ball.

For the first one hundred and fifty years after the discovery of the Wisconsin region by Jean Nicolet, there were no representatives of the medical profession among the early couriers du bois, voyageurs and fur traders. The regular practitioner was the Indian Medicine Man and "Juggler." Their irregular practitioners were the Jesuit Fathers, who treated both the French and the Indians, but the bulk of the medical treatment was furnished by the method most in vogue then as now, namely by the use of home remedies and the forerunners of the modern patent medicine.

The regular practitioner, the Chief Medicine Man, whose influence in the tribe was second to none, not even the chief of the tribe, performed all the propitiatory ceremonies as a protection to the tribe before going to the chase or to war. The "Juggler" held a respected but less exalted position, and took care of individual cases of sickness.

[2]Medicine was a secret art. Novices were initiated with a great deal of ceremony and mystification. Meetings lasted all day and sometimes all the succeeding night, and were interspersed with long harangues about the traditions of the tribes. The virtues of the chief medicinal herbs and medical practices were carefully handed down from generation to generation among a chosen few.

In the treatment of wounds and chronic sores, the Indian Medicine Men were generally more successful than the White Men. They usually dressed the wounds very carefully and applied poultices of native herbs.

[2]Wisconsin Historical Collections—Vol.

In cases of sickness they used concoctions of herb drinks, gave sweatings and rubbings, and also made a practice of sucking out the evil spirit that had laid hold upon the afflicted one, always accompanying their treatment with incantations and ceremonials.

The following extracts from a 17th century journal illustrate well the superstitious practices and theories of some of the Wisconsin tribes: 1665-66: *Perrot visits the Wisconsin tribes and induces them to become allies of the French.* Vol. XVI, p. 53, Wis. Hist. Coll.

(From La Potherie.)

"Let us say something about the art of medicine in vogue in this country. Their science consists in ascertaining the cause of the ailment, and applying the remedies.

"They deem the most common cause of illness to come from failure to give a feast after some successful fishing or hunting excursion; for then the Sun, which takes pleasure in feasts, is angry with the one who has been delinquent in his duty, and makes him ill.

"Besides this general cause of sickness, there are special ones, in the shape of certain little genii, malevolent in their nature, which thrust themselves of their own accord, or are sent by some enemy, into the parts of the body that are most diseased. Thus, when anyone has an aching head, or arm, or stomach, they say that a Manitou has entered this part of the body, and will not cease its torments until it has been drawn or driven out.

"The most common remedy, accordingly is to summon the Juggler who comes attended by some old man with whom he holds a sort of consultation on the patient's ailment. After this, he falls upon the diseased part, applies his mouth to it, and, by sucking, pretends to extract something from it, as a little stone, or a bit of string, or something else, which he has concealed in his mouth beforehand, and which he displays, saying: There is the Manitou; now thou art cured, and it only remains to give a feast.

"The Devil, bent on tormenting these poor blinded creatures even in this world, has suggested to them another remedy, in which they place great confidence. It consists in grasping the patient under the arms, and making him walk barefoot over the live embers in the cabin; or, if

he is so ill that he cannot walk, he is carried by four or five persons, and made to pass slowly over all the fires, a treatment which often enough results in this, that the greater suffering thereby produced cures, or induces unconsciousness of, the lesser pain which they strive to cure.

"After all, the commonest remedy, as it is the most profitable for the physician, is the holding of a feast to the Sun, which in liberal actions, being appeased by a magnificent repast, will regard the patient with favor, and restore him to health."

And this from [3]*Lockwood's Narrative:*

"From early infancy they believe in minor evil spirits, and in ghosts who operate upon, and influence them. While sleeping in a camp of Indians in the night, you will frequently be awakened by the firing of guns, and enquiring the cause you will be told they are shooting the dead that trouble them. Over-loading their stomachs, as they often do, they are no doubt frequently troubled with the night-mare, and imagine that they are attacked by a ghost, and get up and shoot at their supposed intruder. They have also their doctors and astrologers, who are well paid for their services. When a person is sick, they send for a doctor, who gets his pay in advance. He then commences shaking over the sick his gourd, which has in it some beads to make it rattle, until he finds out what is the matter with his patient, which he generally discovers is, that some beast, fish or bird has got into the body of the patient, which by shaking his rattle, singing and other necromancy, he causes to depart. Previously to driving out the unwelcome intruder, he cuts its figure or likeness out of birch bark and places it in front of the door of the lodge, with two young men situated so as to fire at it from different directions at a given signal, who generally blow it into pieces. If this operates upon the mind of the patient so that he recovers, it is well; if not, there is some mistake about it—the animal was not killed, or some evil spirit operates against him. So they try it over aagin, and probably continue to do so for months, until the patient recovers or dies; in which latter case, they have always some good reasons to show why the patient did not recover.

"They have some few specifics, which they sometimes administer, but their art consists mostly in necromancy. They cure wounds generally sooner than most surgeons, because they suck them, and thus keep them clean from all matter. It is also the business of the doctor to suck clean any old sore that he undertakes to cure, no matter how filthy or disgusting; I have seen the doctor pretend by sucking to draw from sore eyes small bits of straw, etc.; and, according to their theory, as in most other complaints, some animal, bird, fish or reptile has inflicted the disease.

"The father-in-law of my interpreter was an Indian doctor among the Sioux. I recollect hearing the old man the most part of a day singing and shaking his gourd-rattle in his lodge; after which he came into the house and sat down, looking very serious and thoughtful. His son, over thirty years of age, had sore eyes, and he was endeavoring to effect a cure. He said that nearly thirty years before, when his son was a very small boy, he had fastened a pin to a stick, and was amusing himself one day spearing minnows, and that he thus pricked one with his pin-spear; and that it was strange that the fish, after so long a time, should come to seek revenge on his son's eyes.

"I have frequently been told by French voyagers, traders and interpreters, of the ceremonies performed by some juggler, in going into his little holy lodge, to consult with the Great Spirit. After having feasted awhile, he strips himself naked, and goes into the lodge alone; and soon after entering, the poles of the lodge commence shaking violently, and those without hear two or three distinct voices within. After this has continued about two or three hours, the juggler comes out of the lodge in a high state of perspiration; during the time of the ceremonies in the lodge, the jingling of bells and other musical instruments is heard as though they were attached to the poles of the tent or lodge; and my informers generally believed that the Indians had communications with the Devil. It so happened, that I never witnessed one of these scenes."

And from an article on [4]*The Chippewa-Indian Nomenclature,* Vol. 1, P. 124, by Hiram Calkins, Esq., of Wausau:

The Chippewa in Wisconsin are divided into sixteen clans or bands, numbering about four thousand persons altogether. Great confidence is

[3]Wisconsin Historical Collections.—Vol.

[4]Wisconsin Historical Collections—Vol.

placed in the chief Medicine Man, as his services are required on all eventful occasions.

The Chief Medicine Man, or Conjuror, is Mah-ca-da-o-gung-a, or the Black Nail, who performed the feat of descending the Long Falls in his canoe, and is represented by the other Indians as being a great Medicine Man. He is always called upon, far and near, in cases of sickness, or in the absence of relatives, to foretell whether the sickness will prove fatal, or whether the friends will return in safety and at what time. He is also consulted by the Indians when they go out to hunt the bear, to foretell whether success will crown their efforts. Before performing these services, he is always paid by the Indians, with such articles as they have, which generally consists of tobacco, steel traps, kettles, broadcloth, calico, and a variety of other commodities. He usually performs after dark, in a wigwam just large enough to admit of his standing erect. This lodge, or wigwam, is tightly covered with mats, so as entirely to exclude all light and the prying curiosity of all outsiders. Having no light within the lodge, the acts and utterances of the Medicine Man or Conjuror are regarded as mysterious, and credulously received by the wondering crowd surrounding the tent. He first prepares himself in his family wigwam by stripping off all his clothing when he emerges singing, and the Indians outside join him in the song with their drums, and accompany him to the lodge, which he enters alone. Upon entering, the lodge commences shaking violently, which is supposed by the Indians outside to be caused by the spirits. The shaking of the lodge produces a great noise by the rattling of bells and deers' hoofs fastened to the poles of the lodge at the top, and, at the same time, three voices are distinctly heard intermingled with this noise. One is a very heavy coarse voice, which the Indians are made to believe is that of the Great Spirit; another is a very fine voice, represented to be that of a Small Spirit, while the third is that of the Medicine Man himself. He pretends that the Great Spirit converses in the heavy voice to the lesser spirit, unintelligibly to the conjuror, and the lesser spirit interprets it to him, and he communicates the intelligence to his brethren without. The ceremony lasts about three hours, when he comes out, in a high state of perspiration, supposed by the superstitious Indians, to be produced by mental excitement.

As we can see in many ways the Indian was ultra modern. He demanded his fee in advance and often had to forfeit it when he failed to make a cure.

He was a firm believer in preventive medicine—not through hygiene but by sacrifices, feasting and the use of inunctions.

[5]The earliest record of the practice of medicine by the missionaries is that left by Father Hennepin when a prisoner among the Wisconsin Sioux Indians about the year 1680. It is a double record of Indian medicine and the practice of the Récollet Order.

Upon his arrival in the Sioux village after a cross country journey of great hardship he was so spent with fatigue that he could hardly support himself upon his feet.

Thereupon after his adoption into the tribe a small boy was made to anoint his limbs with the fat of a wildcat, which as Parkman relates, was supposed to be soverign in these cases, "by reason of the great agility of that animal."

Being still exhausted with the fatigue of the journey his captors prepared for him three times a week one of their sweat baths, from which he thought he derived great benefit. These baths were given in a small hut covered with skins, into which the patient and the Indian Medicine Man entered and as nearly as possible hermetically closed. Upon a pile of heated stones in the center, water was poured. This caused a steam to rise in which the subject stayed for some time. In some tribes he then emerged and plunged into water, by which maneuver he either recovered or perished.

Upon his recovery, Father Hennepin reciprocated by shaving the heads of the children, bleeding some of the Indians who had asthma, and giving them his panacea "Orvietan."

After his final escape from the Sioux, his vicissitudes of alternate fasting and feasting rendered him so ill that on one occasion he had to remain quiet two days taking doses of "Orvietan," before he could proceed on his journey.

This "Orvietan" is the first medicine in Wisconsin which might be correctly called a patent medicine and a panacea. It derived its name from a city in Italy and was used by Father Hennepin

[5]Parkman—"La Salle and the Discovery of the Great West."

for every condition. He gave it to the Indians for small pox and used it himself for the results of over-eating or under-nutrition or for the sickness due to gorging on wild berries. In every way it seems to have been a worthy precursor of "Tanlac" or perhaps the lineal ancestor of "Father John's Medicine."

In regard to the early use of home remedies in Wisconsin, it is fair to presume that the customs of the times were the same among the English and French here as elsewhere. One of the remedies used for the small pox, the plague or any eruptive fever is a black powder; the formula for which is as follows:

[6]"In the moneth of March, take toades, as many as you will, alive; Putt them into a earthen pott, so it will be halfe full. Cover it with a broad tyle or iron plate; then overwhelm the pot so yt ye bottome may be uppermost. Putt charcoals around about it and in the open ayre, not in an house, set it in fire and let it burn out and extinguish of itself. When it is cold, take out the toades; and in an iron-morter, pound them very well and searce them—then in a crucible; calcine them so againe; pound and searce them again. The first time they will be browne powder, the next time black. Of this you may give a dragme in a vehiculum or drinke inwardly in any infection taken; and let them sweat upon it in their beddes, but let them not cover their heads, especially in the Small Pox. For prevention, half a dragme will suffice.

The same powder is used playster wise with vinegar for gangrene or for the bite of any venomous beast taking it likewise inwardly. It is used likewise for King's Evill strewing it upon the sores and keeping them clean. It cureth wonderfully." Two other remedies read thus:

"For paines in ye Brest or Limmes: Weare a Wilde Catts skin on ye place grieved."

"For Soare Brests: Take yolkes of eggs and honie alike, beat them till they be very thinn; then with wheat flour beat them, till it be as thick as honey; spread it upon flax, and lay it upon the Brest, defending the nibble with a plate of lead as bigg as an halfe crowne, and an hole in it so bigg that nibble may come out—renewe it every twelve houres; and this will breake and coole the Brest. When it breakes, tent it with a salve of rosen, wax and terpentine alike quantitie."

Further Instruction in Physic.

1. Yt you do not let blood, but in pleurisie or contusion, and that necessitated.

2. Yt in the beginning of all fevers, you fast two or three days from meate and drinke except ye last day, and that so little, as only to sustain nature; and afterward you come to your dyet by degrees.

3. Yt you people do follow nature and not to contrarie her; as if the partie vomit you purge by vomit; (if the partie be loose you purge downward); if the partie bleed at ye nose ye draw blood.

4. Yt in all purges you administer in long dis cases, or to weake persons, you mixe cordials as confectis Alchermes, and yt you purge with simples and not compounds, except the disease be mixt."

Between this home remedy, treatment by purging, sweating and vomiting and the Indian treatment, our choice if we had to make one today, would be for the incantations, herbs and sweatings of the "Juggler", but we should prefer to take our chances and request with Holmes that

"All Healers of men for a moment decline
"Your feats in the rhubarb and ipecac line.
"While you shut up your turnpike, your neighbors can go
"The old round-about way to the regions below."

This takes us in a geenral way down to the period of the war of 1812. Previous to this, Wisconsin territory was given up to the fur trade. From now on, little by little, settlement began to creep in.

The establishment of permanent military posts by the United States Government at Fort Howard, Fort Crawford and Fort Winnebago, the present sites of Green Bay, Prairie du Sac and Portage, furnished enough guarantee of security against the Indians to attract some of the more venturesome settlers.

Civilian physicians are seldom in the forefront of pioneer life. They are followers rather than leaders in settlement. Seldom if ever, do they join an expedition of conquest or explorations. They come with the home builders and cultivators of the soil. This then is another period in Wis-

[6]Winthrop Papers.—Packard's History of Medicine in the United States.

consin History in which medical aid was furnished by the Indian and by the use of home remedies.

Those who pioneered on the western frontier at this time brought with them Buchan's Domestic Medicine, a book whose influence was greater than any other similar work ever published. Its range of information includes the prevention and cure of diseases, a treatise on Materia Medica, and an appendix consisting of a dissertation on the breeding, training and cure of horses, sheep and cattle and advice as to their purchase together with a complete family directory of useful knowledge and household receipts.

Among the latter is a receipt for a liquid to take out ink stains, iron-rust and mildew, followed by one for "Pills for palsy, and convulsion fits," which in turn is followed by a rule for oyster catsup.

The introduction to the book well repays perusal. Buchan begins with a discussion of the prevention of infant mortality, a sufficiently modern thought, and he handles it in a modern way, remarking that it may seem strange that one-half the children in England die before their twelfth year, and that man falls far short of other animals in the management of his young, but, our surprise will soon cease if we consider that brutes guided by instinct never err in this respect, while man, trusting solely to art, is seldom right.

"How can a mother be better employed than in superintending the nursery? This is, at once, the most delightful and important office! Yet the most trivial business or insipid amusements are often preferred to it! A strong proof both of the bad taste and wrong education of modern females."

"Teaching the proper management of children to those whom nature has designed for mothers, instead of being made the principal, is seldom considered as any part of female education."

The blame is not wholly laid at the door of the mother as he goes on to berate the father for taking more interest in his stables and kennels than in his children and the physician, himself, comes in for a scolding in these words:

"Nor have physicians, themselves, been sufficiently attentive to the management of children: This has been generally considered as the sole province of old women, while men of the first character in physic, have refused to visit infants when sick. Such conduct in the faculty has not only caused this branch of [illegible] to be neglected, but has also encouraged the other sex to assume absolute title to prescribe for children in the most dangerous diseases. The consequence is that a physician is seldom called till the good women have exhausted all their skill, when his attendance can only serve to divide the blame, and appease the disconsolate parents." We are reminded of Osler's famous proposal to follow Trollope's suggestion for chloroforming all men above sixty. We read, "What labor and expense are daily bestowed to prop an old tottering carcass for a few years, while thousands of those who might be useful in life, perish without being regarded!"

He further discusses the general subjects of exercise, diet and fresh air in an illuminating way.

The only rivals of this work were a few Indian Medicine Men, who obtained some practice among the white as well as among their own people, but who did not respond very willingly to calls from white people, because they were as a rule poor pay. At Prairie du Chien there was a woman of mixed African and white blood, who went by the name of Aunt Mary Ann. She acted as mid-wife and physician, attending regularly all cases when sent for, charging fees and giving, what she herself termed, "device and yarb drink." She was reputed an excellent nurse, and even after regular army surgeons were stationed at Fort Crawford in 1816, she continued to practice, and frequently where good nursing was more necessary than medicine, would succeed in curing her patient where the army surgeon failed, an ever popular cause for making jokes at the expense of the surgeon by many of the settlers.

The best educated physicians of the East, those fresh from the teaching of Europe, sought the large cities and contributed to the development of medical education in this country.

The first physicians to come to Wisconsin were army surgeons, stationed at the three important military posts mentioned above.

There were practically no permanent settlements in Wisconsin outside these forts till after the Black Hawk War, which finally drove the hostile Indians from the territory.

The first road was a military highway connecting the three military posts and was not built till 1832. Before this war frequent attacks upon isolated cabins and sparsely settled communities resulted in a state of mind not conducive to an inrush of settlers.

[7]The first physician to be stationed in Wisconsin was David Mitchell, a graduate of Edinburgh University and a British army surgeon. He was assigned for a while to the Indian service at Lake Winnebago (1813-1814) and subsequently was stationed at Mackinac till the peace of 1815 when the English finally gave up possession of this valuable fur trading post. Dr. Mitchell is reported to have been a man of iron will and of such inflexible hatred of the Yankees that he refused to live on American soil, and accordingly moved to Drummond's Island, leaving his wife and daughters at Mackinac, where they kept a large establishment and where Mrs. Mitchell, who, tradition says, was a woman of the Ottawa tribe, did an extensive business in the fur trade.

[8]To Dr. David Ward probably belongs the distinction of being the first civilian physician in Wisconsin. He was a native of Vermont who came to Green Bay from Essex County, New York, in 1831. He attained considerable reputation as a physician at a time when it was very much the fashion to employ the fort doctors—who represented the clinic of that period—taught school at Shanty Town, was interested in the navigation of the Fox and Wisconsin rivers by steamboat, was a public servant as county treasurer and was acquainted with many of the notables of early Wisconsin history.

Among the army surgeons were Dr. Wheaton, stationed at Green Bay as early as 1824, described as a kind and skillful surgeon, [9]Dr. Lyman Foot, ordered to Fort Winnebago in 1834, and long remembered there as an eminent surgeon and physician, and [10]Dr. Samuel C. Muir, a Scotchman stationed at Fort Crawford about 1816. When his life was threatened, he was saved by a young squaw, whom he married and afterward abandoned, but her love for him was so strong that she followed him with her infant from Prairie du Chien to Keokuk, a distance of two hundred miles. Muir was so moved by her courage and devotion that he took her once more and ever after remained faithful to her. The only other blot upon his memory was that he was too fond of drinking, but this seems to have been a frequent failing of army surgeons at this period. Life at these army forts was quite fashionable and gay. The officers lived in considerable comfort and some luxury, and as a rule the army surgeon was of a distinctly high type during and after the Black Hawk war.

At the time of the cholera epidemic Dr. Muir again volunteered his services (having left the army upon his marriage), and worked heroically among the stricken soldiers, only to be attacked himself, and die in twenty-four hours. After his death, his family returned to the tribe of the mother's people, she being discouraged and penniless because of prolonged litigation over Dr. Muir's estate.

[11]The only information which we have about another army surgeon, Dr. William S. Madison, stationed at Green Bay in 1821, is that while on the way to Detroit with two soldiers, he was murdered by the Indians.

He was succeeded at Green Bay by Dr. William Beaumont, whose life I am entitled to include in this sketch of Wisconsin Medical History in much the same way that Massachusetts people speak of the Battle of Lexington which was fought at Concord by men of Acton. Dr. Beaumont of Wisconsin was born in Connecticut, educated in Vermont, was stationed at Mackinac, Green Bay and Prairie du Chien and later practiced, lived and died in St. Louis.

In order properly to appreciate the remarkable character of this man's work, it will be necessary to digress for a moment and consider the standards of medical education and practice in the country at large. The spirit of the founders of medical education in America is one of which we can justly be proud. But the knowledge of medicine was meagre in the extreme. During the greater part of the eighteenth century, there were two ways in which a man could educate himself for the medical profession, either by going abroad and studying in Edinburgh, London, Paris, Holland or Italy, where the greatest schools existed at that time, or by becoming apprenticed for a term of two to five years, to a practicing physician at home and reading as widely as possible during the while. Generally an apprenticeship meant service of every description, at first of the most menial type, taking care of the horse, cleaning the office,

[7]Wisconsin Historical Collections—Vol. III.
[8]Wisconsin Historical Collections—Vol. XV.
[9]Wisconsin Historical Collections—Vol. VII.
[10]Wisconsin Historical Collections—Vol. II.
[11]Wisconsin Historical Collections—Vol. IV. p. 164.

later compounding prescriptions, helping at operations and finally shouldering some of the real responsibility of the work, visiting all patients with the doctor and when occasion offered, studying anatomy from an amputated limb or rarely an anatomy.

Getting a foreign education was such an expensive matter that none but the well-to-do could consider it. Medicine to these men was often a vocation to which they devoted their whole lives with an earnestness seldom equalled. They were more ready to adopt innovations than their European confréres. For example, the art of percussion of the chest received no recognition in Europe for a considerable time but it was taken up here as soon as Auenbrugger's discovery was known. The same was true of the science of auscultation by the use of the stethoscope, which was brought back by Paris students fresh from the teachings of its master, Laennec.

Vaccination which was first tried by Jenner on his own son in 1796, was scarcely noticed in England for years. But it was early tried and approved of in this country, and among the earlier testimonials received by Jenner was a wampum belt sent by the Five Nations of the Iroquois, who were successfully vaccinated and protected as early as 1807. Thomas Jefferson, while he was president, wrote the following letter of congratulation to Jenner.

[12]"Sir:

I have received the copy of the evidence at large respecting the discovery of the vaccine inoculation, which you have been pleased to send me, and for which I return you my thanks. Having been among the early converts in this part of the globe to its efficiency, I took an early part in recommending it to my countrymen. I avail myself of this occasion to render you my portion of the tribute of gratitude due you from the whole human family. Medicine has never before produced any single improvement of such utility. Harvey's discovery of the circulation of the blood was a beautiful addition to our knowledge of the human economy; but on a review of the practice of medicine before and since that epoch, I do not see any great amelioration which has been derived from that discovery. You have erased from the calendar of human afflictions one of its greatest. Yours is the comfortable reflection that mankind can never forget that you have lived; future nations will know by history only that the loathesome small-pox has existed, and by you has been extirpated. Accept the most fervent wishes for your health and happiness, and assurances of the greatest respect and admiration.

"Th. Jefferson."

Law makers today are showing a degree of intelligence which not only is put to shame by this letter of one of the founders of the nation, but which lags far behind the enlightenment of the Iroquois Indians.

So little was known of the real cause of disease, however, that much of the treatment was not only irrational but worse than none at all. All fevers were treated by purging, puking, sweating or bleeding. Benjamin Rush of Philadelphia, whose influence in American medicine was most profound for fifty years, carried the use of venesection to the highest point it ever reached. To calomel, one of his favorite drugs which he administered in heroic doses, Rush gave the epithet of the "Samson of Medicine," and his enemies agreed that it had been rightly named, since it had "slain its thousands."

Anatomy was the only science taught, and this only by demonstrations. The knowledge of medicine was an incongruous mixture of superstition and absurdities. All diseases were treated according to the nature of the pulse, either by stimulation or depletion and when in doubt, apparently one always compromised on depletion which meant bleeding and purging. Not for nearly one hundred years was the infectious nature of any disease, the necessary starting point for treatment, to be known.

In such a world of medicine entered the pioneers of the west, most of whom were self-made men who had been apprenticed to practitioners in the east, imbued with a love for and devotion to the art of medicine, but entirely ignorant of the science of medicine, as we know it today, completely divorced as it is now from superstition.

The experimental method in medicine was undreamed of; the germ theory of disease, a phrase that now sounds almost hackneyed, was still over fifty years in the future and was then to have a hard fight for acceptance.

One fair day in June, 1820, on board the first steamboat to navigate the upper lakes, a Fultonian side-wheeler that bore the picturesque name,

[12]Walsh—"Makers of Modern Medicine."

"Walk-in-the-Water," a young army surgeon might have been seen writing in his journal. Interspersed with descriptions of scenery and first impressions of his trip, were philosophical notes and rules of conduct like the following:

[13]Physicians, when tending upon their patients, should make their health their first object. So gentle and sympathizing should be their dispositions and manner in the apartment of the sick that pain and distress should seem suspended in their presence. So exhilarating ought their visits to be that hope should follow their footsteps, so salutary their prescriptions that death should drop his commission in combat with their skill."

"Adopted the following maxim this day: Trust not to man's honesty, whether Christian, Jew or Gentile. Deal with all as though they were rogues and villains; it will never injure an honest person, and it will always protect you from being cheated by friend or foe. Selfishness or villainy, or both combined, govern the world, with a very few exceptions."

Here we have in a man just turned thirty-five, a combination of idealism in his profession and cold realism in his contact with his fellow men that augurs well for the future. Happy is he who can combine the cold practical mind of the scientist with idealism and warm human sympathy.

Such was the character of Dr. William Beaumont, the story of whose life introduces into early Wisconsin Medical History, at once its most unique and most important chapter.

He was first stationed at Mackinac, the historic gateway to Lake Superior and Lake Michigan and the country beyond; the site of the old Jesuit Mission of St. Ignace, where Marquette's bones lie buried; at this period and season one of the centers of Astor's great monopoly, the American Fur Company.

A native of Connecticut, he had obtained his whole medical education as apprentice during two years to Dr. Benjamin Chandler of St. Albans, Vermont, to whose friendly inspiration and instruction he owed those habits of close observation and careful notation that were to make his name famous.

The incident which was to direct the whole course of his life and which created for him the opportunity for his great work is vividly described by an eye witness of the accident: "This Alexis St. Martin was at the time one of the American Fur Company's engagees, who, with quite a number of others, was in the store. One of the party was holding a shotgun (not a musket), which was accidentally discharged, the whole charge entering St. Martin's body. The muzzle was not over three feet from him—I think not over two. The wadding entered, as well as pieces of his clothing; his shirt took fire, he fell, as we supposed, dead.

[14]Dr. Beaumont, the surgeon of the fort, was immediately sent for, and reached the wounded man within a very short time—probably three minutes. We had just got him on a cot and were taking off some of his clothing. After Dr. Beaumont had extracted part of the shot, pieces of clothing, and dressed his wound carefully. Robert Stewart and others assisting, he left him, remarking. "The man can't live thirty-six hours. I will come to see him by and by."

There followed the most careful and prolonged treatment extending over a period of two years, the latter half of which was spent in Beaumont's own home, since the county refused further charity. This is an eloquent tribute to the spirit of the man, for at his time, his motives were purely humanitarian. In addition we must remember that a surgeon's salary at this period was forty dollars a month. In spite of all his care, however, the patient's wound would not close, there remaining an aperture in his stomach about the size of a man's thumb. We learn from Dr. Beaumont's diary that he did not conceive of the plan of using the patient for experimental purposes until three years after the accident, when he comments as follows: "This case affords an excellent opportunity for experimenting upon the gastric fluids and process of digestion. It would give no pain, nor cause the least uneasiness, to extract a gill of fluid every two or three days, for it frequently flows out spontaneously in considerable quantities. Various kinds of digestible substances might be introduced into the stomach, and then easily examined during the whole process of digestion. I may, therefore, be able hereafter to give some interesting experiments on these subjects."

It was nearly four years after the accident that Beaumont began his experiments on the physiology of the stomach, but scarcely had he got under way when he was transferred to Fort Niagara. After completing some of his investigations he tried to

[13]"Life of Wm. Beaumont."—Myer.

[14]"Life of Wm. Beaumont."—Myer.

get a furlough for the double purpose of visiting his family at Plattsburg, and exhibiting Alexis to some of the scientists of the day.

While enroute, however, the ungrateful Alexis took French leave and crossed the Canadian border to his home in Ontario, where he was "lost to sight, to memory dear" for the next four years. Thus just at the beginning Beaumont was deprived of his subject, a disappointment so keen that it was months after that he became reconciled to the loss, and then only because he hoped someone else more fitted than he to carry on the work he had begun would fall heir to Alexis.

The experiments already performed related to the time of digestion of certain foods and the temperature of the stomach.

Some months afterward he was again transferred, this time to Fort Howard (Green Bay). During his stay here he corresponded with the Surgeon General in relation to vaccination for small pox, and introduced it into Wisconsin, and also while here the truant Alexis was located and finally persuaded to enter Beaumont's service, after four years of absence. By this time, however, Beaumont had again been transferred, this time to Fort Crawford. He describes his later work in these words: [15]After considerable difficulty, and at great expense to me, they succeeded in engaging Alexis and transported him from lower Canada, with his wife and two children, to me at Fort Crawford, Prairie du Chien, Upper Mississippi, a distance of nearly two thousand miles, in August, 1829. His stomach and side were in a similar condition as when he left me in 1825. The aperture was open and his health was good.

He now entered my service, and I commenced another series of experiments on the stomach and gastric fluids, and continued them interruptedly until March, 1831. During this time, in the intervals of experimenting, he performed all the duties of a common servant, chopping wood, carrying burdens, etc., with little or no suffering or inconvenience from his wound. He labored constantly, became the father of more children, and enjoyed as good health and as much vigor as men in general. He subsisted on crude food in abundant quantities, except when on prescribed diet for particular experimental purposes and under special observance."

[15]"Life of Wm. Beaumont."—Myer.

In the spring of 1831 circumstances made it expedient for him to return with his family from Prairie du Chien to lower Canada again, I relinquished his engagements to me for the time on a promise that he would return when required, and gave him an outfit for himself, wife and children. They started in an open canoe via the Mississippi, passing by St. Louis, Mo., ascended the Ohio river, then crossed the state of Ohio to the lakes, and descended Lake Erie, Ontario, and the River St. Lawrence to Montreal, where they arrived in June."

Two years later Beaumont applied for a year's furlough to go abroad to study and investigate the patient. The request was granted only to be countermanded because of the impending Black Hawk War.

During this period the last great epidemic swept through the Mississippi valley. Cholera was brought from Detroit by a regiment of soldiers and it swept the country, decimating the soldiers, and with great fury, attacking the Indians.

Finally, after the war and the cholera epidemic, a furlough was granted for six months and according to agreement, Alexis St. Martin met Beaumont at Plattsburg, and the doctor immediately began his experiments again, not however, until he had drawn up and had signed the following unprecedented and unique contract:

[16]Articles of agreement and convenant, indented, made, concluded and agreed upon at Plattsburg, in the County of Clinton and State of New York, the Nineteenth day of October, in the year of our Lord one thousand eight hundred and Thirty-two, between William Beaumont, Surgeon in the Army of the United States of America, of the one part, and Alexis St. Martin, Laborer, of Berthier, in the Province of Lower Canada, of the other part, as follows, to-wit:

The said Alexis St. Martin, for the consideration herein mentioned, doth covenant, promise and agree to and with the said William Beaumont, his heirs, executors, administrators and assigns, by these presents in manner following—that is to say that he, the said Alexis, shall and will for and during the full term of one year, to begin and to be accounted from the date of these presents, serve, abide, and continue with the said William Beaumont, wherever he shall go or travel or reside in any part of the world, his covenant Servant, and

[16]"Life of Wm. Beaumont."—Myer.

diligently and faithfully, and according to the utmost of his power, skill and knowledge, exercise and employ himself in and do and perform such service and business matters and things whatsoever as the said William shall from time to time order, direct, and appoint to and for the most profit and advantage of the said William, and likewise be just and true and faithful to the said William in all things and in all respects.

And the said Alexis, for the consideration hereinafter mentioned, further specially covenants and agrees with said William that he, the said Alexis, will at all times during said term, when thereto directed or required by said William, submit to, assist and promote by all means in his power such Physiological or Medical experiments of the said William in relation thereto, and in relation to the exhibiting and showing of his Stomach, and the powers and properties thereof, and of the appurtenances, and powers, properties, situation and state of the contents thereof. It being intended and understood both by said William and said Alexis that the facilities and means afforded by the wounds of the said Alexis in his side and stomach shall be reasonably and properly used and the purposes of science and scientific improvements, the furtherance of knowledge in regard to the power, properties and capacity of the human stomach.

And in consideration of the premises, and of the several matters and things by the said Alexis to be performed, suffered and done as aforesaid, according to the true intent and meaning of the premises, and on condition that the said Alexis shall and does perform the same on his part, according to the true intent and meaning thereof, and not otherwise, the said William Beaumont doth for himself, his heirs, executors and administrators covenant, promise and agree to and with the said Alexis by these presents that the said William shall and will at all times during the said term find and provide unto and for the said Alexis suitable, convenient rooms or house when with and in the service of the said William, and also defray the necessary expenses, and furnish the said Alexis good, suitable and sufficient subsistence, washing, lodging and wearing apparel when journeying with at the request and directions of said William. And also well and truly pay, or cause to be paid, unto the said Alexis, his executors or administrators, the just and full sum of one hundred and fifty dollars lawful money of the United States of America in manner following, to-wit: the sum of forty dollars, parcel thereof, to be paid to said Alexis at or within one day after the execution of these presents, and the residue thereof, being one hundred and ten dollars, to be paid on personal application to said William, his executors or administrators at the expiration of the said term, which will be one year from the date hereof.

In witness whereof, as well as the said Beaumont as the said Alexis St. Martin have hereunto set their respective hands and seals, the day and year first herein written, in the presence of each other and in the presence of Johnathan Douglas Woodward, Esquire, the subscribing Notary Public.

J. Douglas Woodward,
Thomas Green,
Benjamin T. Morris.

After repeated disappointments and delays his work on the physiology of digestion was published and so complete and accurate was it that little material additional knowledge has been made to the subject in the hundred years that have since elapsed. Even the X-ray has added practically nothing to his direct observations.

The remarkable features in the life of this man are the utter lack of background and stimulus to original work. What he did was truly done from the genius which in him lay, and was done at a time when the impetus to original investigation in medicine had not been felt in this country. He had a truly open mind, one which was typical of our new country, and he showed a willingness to strike out on a new path. Many have attributed his discoveries to the fortuitous accident to Alexis St. Martin, but several similar cases had occurred, and nobody had seen or seized the opportunity until Beaumont dedicated his life to the task, as a duty that he owed to humanity.

With this ends the period of early medical history in Wisconsin,—an astonishing climax to a record of Indian necromancy, white men's superstitions, and professional ignorance; a remarkable monument to crown so modest a pedestal. It is safe to say that no future generation of physicians will add a greater glory to Wisconsin's history of achievement than that embodied in the tribute which Osler has given William Beaumont—America's first great physiologist.

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EDITORIALS

IMPORTANCE OF REPORTING TUBERCULOSIS.

THE drafting of men for military service in the late war gave a great impetus to the reporting of births. For the first time, in many instances, not alone the general public, but practising physicians as well, learned that birth registration was something more than a bureaucratic imposition upon the good nature of physician and layman. To many, the obligation to register births had hitherto seemed an almost Prussionlike invasion of personal liberty.

A similar result is likely to follow from the researches of the War Risk Bureau in determining the legitimacy of claims for compensation on the part of disabled ex-service men. In the instance of tuberculosis, for example, the Federal authorities are checking up the certification of the existence of the disease by securing from local health officers the date on which the attending physician has reported the patient as tuberculous to the local health department, as is required by law. This procedure in many instances cannot fail but be embarrassing to the physician and to the claim of the ex-service man for compensation. In the state as a whole the authorities have not yet succeeded in securing reports of as many living cases of tuberculosis in a single year as die of the disease during that year. This, in spite of the fact that in Milwaukee the registration of living cases is very satisfactory indeed, inasmuch as there are about twelve living cases reported for each death.

It should be too obvious to need discussion among scientific medical men that the public control of tuberculosis must depend, first, upon the knowledge of the whereabouts of disease and, second, the institution of treatment and control measures of one sort and another. That the practice falls short of the precept, however, is obvious when, as indicated above, such a small proportion of the living cases is reported outside of Milwaukee.

The reporting of cases must become a habit if the medical profession is to meet its full obligation in the control of this and other preventable diseases. Habits, however, are not formed except as the result of patient and persistent attention. Good intentions, we are informed, are the paving blocks of hell. Right now, we are not concerned whether hell is paved at all. We are all vitally concerned, however, in the ex-service man securing justice. This means that the man who has a legitimate claim shall not have that claim destroyed by the carelessness or indifference of someone from whom he has a right to expect carefulness. It also means that men without a legitimate claim shall not be able to usurp the privileges and rights of those entitled to them. Let us begin today severally and collectively to

report cases of tuberculosis whether they be among ex-service men or among the civil population.

SUGGESTIONS FOR PROGRAM FOR MAY 12TH.

Good Will and Interest of Community Followed Adoption of These Ideas by 1,500 Hospitals on 1921 Hospital Day.

SOME ideas carried out by hospitals throughout the United States and Canada on 1921 National Hospital Day included:

INSPECTION OF INSTITUTION.

INSPECTION OF NURSES' HOME.

GRADUATION EXERCISES FOR NURSES.

EXHIBITION BY X-RAY, DIETARY, LABORATORY, OCCUPATIONAL THERAPY, SOCIAL SERVICE, AND OTHER DEPARTMENTS.

SERVING OF LUNCHEON TO CLUBS, BUSINESS MEN AND SIMILAR GROUPS.

LUNCHEON FOR PUBLIC, FOR WHICH CHARGE WAS MADE.

DISTRIBUTION OF LITERATURE AND BUTTONS.

PAGEANTS BY NURSES, OR BY CHILDREN UNDER DIRECTION OF SOME LOCAL ORGANIZATION.

BABY SHOW FOR INFANTS BORN IN HOSPITAL DURING PAST TWO YEARS.

PAMPHLETS describing the various services rendered by the hospital, some facts concerning its work during the past year, details of the number of loaves of bread, pounds of meat, etc., required, should be distributed to all who come. Hospitals with nurses' schools should devote considerable part of this pamphlet to the ideals of nursing, requirements, etc., for admission and the expansion of nursing service along public health, industrial, tuberculosis and other lines, as well as to the opportunities open to graduate nurses.

Tactful guides should be provided to take visitors through the buildings. Emphasis could be put on some department that is unusually well equipped or that is doing splendid work, and attention also could be directed to a department badly crowded or in need of apparatus. During the inspection of the hospital, attention could be called to the work done by each department inspected, and visitors at the nurses' home could be impressed with the comfortable quarters, good food, etc., with particular stress laid on the fact that nurses are being educated and not exploited.

At the graduation exercises a leading clergyman should be asked to say the prayer, the president of the hospital could be chairman and the mayor or some other prominent citizen be asked to talk. His subject might be "How Hospital Service Is Expanding" and he could be given information concerning the development of pre-natal, outpatient, social service, and other preventive work of the hospital.

The superintendent could talk on "Our Hospital" and recite some facts concerning the origin and expansion of the institution, with data of an early period compared with the service rendered during the past year. The needs of the community and the necessary expansion of the present facilities could be dwelt on and then some figures given relative to the cost of caring for the average patient and the amount of free work done. An outline of the various departments, such as dietary, laundry, business administration, and others of which the general public knows nothing, would enlighten the audience.

If the superintendent also is superintendent of the training school, she could condense her remarks on some of the topics outlined above and elaborate on the nursing profession, of the rapid development of this profession under the stimulus of Florence Nightingale and of the gradual elevation of training school standards. The growing demand for nurses in communities, industrial plants and for special hospitals could be explained and then the educational equipment of the school could be described in detail. Where there is a superintendent of nurses, the hospital superintendent could omit all reference to nursing and let the superintendent of the training school discuss this subject in length.

GENERAL MEETING. Through the hospital trustees, women's auxiliary, etc., a public meeting might be arranged for the evening of May 12, if graduation exercises are not to be held. This meeting could be along the lines of the program suggested for the graduation exercises and could be made more attractive if some of the nurses would sing or render musical selections. Hospitals that have nurses' choruses or glee clubs could capitalize them at such gatherings.

HOSPITAL BALL. Socially prominent trustees or members of women's auxiliaries might arrange a ball, the proceeds of which could be devoted to some special work of the hospital.

Fraternal and Religious Organizations, in some instances, can arrange entertainments, dances, etc., at which a prominent lay speaker, who could be supplied with the necessary facts, would talk about the hospital service of the community, the special needs of the institutions, and the nursing profession.

Publicity is the vital factor in a successful hospital day. Hospitals should use every means to bring National Hospital Day to the attention of their communities and to stimulate other hospitals to participate. A general meeting such as outlined above, held in the interest of all the hospitals of the community, in addition to the individual hospital's program of inspection, would be of untold benefit.

Governor. Write to your governor and ask his endorsement or official comment on National Hospital Day. His remarks will be carried through the press and reach the entire state as well as your own people.

Mayor. Write to the mayor for endorsement and official comment on National Hospital Day and your local papers will gladly print his remarks.

American Legion. Hospitals that are caring for ex-service men can obtain the endorsement of the local posts of the American Legion and through them that of the state organization. Such an endorsement of National Hospital Day will mean widespread publicity.

Churches. Have the churches tell about National Hospital Day on the Sunday before May 12 and invite the public to go to the hospital and see for itself how the sick are cared for.

Theaters. Moving picture houses will readily aid in the National Hospital Day movement by showing slides calling attention to the day.

Schools. Through the schools, particularly the high schools, an invitation should be extended to all girls interested in nursing and to their parents to come to the nurses' school and see for themselves the actual living conditions, educational and recreational facilities of pupil nurses. This announcement should be made the Friday before National Hospital Day and again on May 11.

Merchants. Department stores might be prevailed upon to have a National Hospital Day window, showing gifts acceptable to patients or supplies in use at the hospital. Florists, confectioners, druggists, etc., also could be interested in National Hospital Day since flowers, stationery, etc., will be bought by friends of the patients or sent on May 12.

Trustees. Have each one of your trustees and members of staffs, auxiliary boards, etc., interest themselves in National Hospital Day. Their prominence insures attention to anything they say and thus they can be made an important factor in the newspaper publicity.

Press. First, have the president of the board or some other officer tell the owner of the local papers that on National Hospital Day gifts of various kinds will be brought to the hospital and that the paper could have a National Hospital Day page or column of small ads from florists, department stores, etc. This would mean additional revenue to the papers and they would be interested in telling the people about National Hospital Day so as to convince the merchants of the advisability of running cards on the page. This page of ads could be run the Sunday before May 12, and maybe daily from then until National Hospital Day.

Second. Have you used the article for the press in January Hospital Management? This is an admirable introductory notice to your local papers. Follow this up as you decide on each detail of the program. For instance, when you decide on the hours for visitors to the hospital on National Hospital Day, send a note to that effect to the papers, along with something about the organized effort of the 8,000 hospitals of North America to tell the public about their work. When you obtain the consent of the clergyman, the president of the board, the mayor and others to serve at your graduation exercises or meeting, send a note in separately and thus have that many additional notices in the press.

PREMEDICATED ALCOHOL.

A PLAN on foot in Washington which, to the average physician, may sound reasonable and possibly desirable, is to permit the use of denatured, or, as it has been dubbed, "premedicated" alcohol for use in remedies intended for internal administration. Perhaps we would be more inclined to look with favor upon this proposal if it came from some other source; but,

in view of the fact that it is being sponsored by the proprietary medicine interests, we feel like scrutinizing it pretty carefully.

The plan, in a nutshell, is this: Alcohol used in medicine shall be "premedicated" with one or more of the ingredients used in that medicine, and when it is so premedicated, it shall be free from tax.

Sounds reasonable enough, doesn't it? But stop a minute and analyze the situation. First, what does this mean to the proprietary medicine manufacturer? It means simply this: Most of his goods are sold at fixed prices per bottle. If he can get his alcohol free, the "spread" between cost and selling price will be greatly increased, also his profits. Such an arrangement would put thousands of dollars annually into the pockets of every man or firm manufacturing a patent medicine selling at a fixed price.

Simple enough when only one of two preparations are concerned. But, before passing judgment, turn to the other side of the picture. The pharmaceutical manufacturer puts out 500, 1,000 or 2,000 different alcoholic preparations; in other words, instead of having to deal with one or two, or even half a dozen formulas of denatured alcohol, he would have to have as many, or nearly as many alcohols as he has preparations. This means an enormous stock of alcohol on his shelves, and large capital tied up. Consequently, the saving to the consumer would necessarily be small.

Furthermore, our official tinctures, elixirs and fluid-extracts are made according to methods developed by the experience of one hundred years or more. In some of these preparations, pure alcohol is used; in others, 10 percent alcohol,—different dilutions, according to the solubility or physical properties of the drug to be treated. For instance, in denaturing or premedicating digitalis with 95-percent alcohol, we get quite a different preparation than we should if the strength of alcohol required in the Pharmacopeia were used.

Still further, the scientists interested in the development of the Pharmacopeia, such men, for instance, as Dr. Fullerton Cook, chairman of the Revision Committee of that official book, declared that, to adopt a plan of premedication like this, would endanger our official standards of hundreds of preparations and make the book itself a joke.

And, still further, the "premedication" or dilution of the alcohol would be done in the distillery, by the distiller's employes and not by pharmacists and others trained in the handling of pharmaceutical preparations. The scientific control over the manufacture of these drugs would be lost.

It seems to us quite clear that the only one who would benefit by "free" and "premedicated alcohol" of this kind would be the manufacturer of such preparations as S. S. S., Tanlac, and Lydia Pinkham's Compound. The price to the doctor and his patient would not be greatly affected, while the character of the preparations which he uses would be seriously endangered. Incidentally, the government would lose about $20,000,000 of revenue annually.

I am sure that no physician who understands the situation would for a minute think of endorsing a dangerous plan of this character. Why not tell your congressman how you feel about it, and ask him to report to the proper authorities.

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CASE REPORT OF CHOLECYSTITIS COMPLICATING PARATYPHOID FEVER WITH SUBSEQUENT ISOLATION OF BACILLUS PARATYPHOSUS FROM THE BILE.

BY T. F. REITZ, M. D.

CLINIC OF THE UNIVERSITY OF WISCONSIN.

Regardless of the merits of the controversy surrounding the development of the Meltzer-Lyons gall bladder drainage, certain data of unquestionable diagnostic value may be obtained by the routine application of this procedure in suitable cases. The cytologic and bacteriologic findings properly oriented and correlated with other clinical information, constitute important diagnostic links. The recent reports of Smithies[1] and Lyons[2] with his co-workers on the isolation of B. typhosus from the gall bladder bile lead us to put this case on record.

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[1]Smithies, et al, J. A. M. A., Vol. LXXVII, No. 26.
[2]Lyons, Am. J. Med. Sc., Jan. 22, Vol. CLXIII, No. 1

Case: L. L. A white, male student, 20 years of age admitted to the University Infirmary, September 26, 1921, complaining of headache and malaise.

H. P. I. Ten days ago the present condition began with headache, frontal in type with left side more marked. This headache continued unabated, and five days ago malaise and slight nausea were added. Unable to attend school work. Next vomiting developed. There was nothing characteristic about the act nor the vomitus. Patient believes fever of three days duration. Anorexia is almost complete. Diarrhoea—3 to 4 watery yellow stools daily. Condition has steadily progressed. Present symptoms of note are headache, malaise, nausea, vomiting and diarrhoea. No symptoms referable to the cardio-vascular, respiratory or genito-urinary systems.

P. M. H. Usual diseases of childhood. Otherwise unimportant.

F. H. Irrelevant. No similar affection in family.

S. H. Spent time prior to entrance to school this Fall at home. Sister a public welfare nurse, reports case of typhoid fever in his community under her care.

Physical Examination—Patient lies quietly in bed in no apparent pain nor discomfort. Drowsy.

Skin: No abnormal pigment or eruption.

Head: Eyes—pupils round, regular and equal; react to light and accommodation promptly. Right palpebral fissure wider than left. Nose—slight congestion of mucous membrane. Ears—normal. Mouth—tongue has a heavy yellow coat. Teeth normal. Tonsils and pharynx negative.

Neck: Some enlargement of anterior cervical lymph nodes.

Chest: Lungs show no abnormality. Heart normal in size, rhythm and sounds.

Abdomen: Slightly dome shaped. Tenderness over entire abdomen, especially over descending colon. Colon distended. Peristalsis active. Spleen extends 2 cm. below the costal margin on ordinary respiration and on percussion the upper border reaches to the upper border of the seventh rib. Liver and kidneys are not palpable.

Extremities: Negative. Pulse is typically dicrotic. Reflexes—equal and active. No abnormal reflexes.

Laboratory data: Hb. 89%; R. B. C., 3,920,000; W. B. C., 6,400; Differential; Poly. 58%; Lymph. 30% Trans. 11%; Baso. 1%.

9-28-21. Blood culture negative. W. B. C., 6,000. Abdomen distended.

9-29-21. Blood culture negative. Urinalysis—Diazo reaction positive.

9-30-21. Widal positive.

10-1-21. Tympanites less marked. Complains of dull aching pain over lower abdomen. No suggestive local signs. 7 A. M., W. B. C., 15,000; 10 A. M., W. B. C., 11,000; 2 P. M., W. B. C., 7,000. For six days the course was uneventful.

10-7-21. Complains of pain in the right upper abdomen. To examination there is definite localized tenderness with increased resistance in the right upper quadrant. W. B. C., 12,000. This condition slowly subsided; and with the lessening of muscular resistance the gall bladder became definitely palpable on 10-8-21, and continued so for five days.

10-22-21. The duodenal tube was passed on a fasting stomach. After one (1) hour and twenty (20) minutes, the position of the bucket being judged by reaction of withdrawn fluid and position of bubble, magnesium sulphate solution was introduced. An early specimen of light yellow bile (a) was collected in a sterile bottle. In twenty (20) minutes a thick, tenacious dark green bile (b) appeared and a second specimen was collected.

10-24-21. Dr. Zellmer reports the following: Bile A and B and stool submitted on 10-22. Bile A was sterile while Bile specimen B and the stools were positive for B. paratyphosus A.

(Slight agglutination by microscopic method with B. typhosus early (4th or 5th day). Macroscopic agglutination with B. Typhosus, paratyphosus A and B. about a week later showed B. typhosus 1-120; B. paratyphosus A, 1-320; B. paratyphosus B, 1-120. Organism from stools tested culturally to confirm above, this organism agglutinated by his serum in dilutions of 1-320.)

At no subsequent examination was it possible to isolate the Bacillus paratyphosus from the bile, although in two subsequent occasions it was found in the stools.

DISCUSSION.

A clear cut case of paratyphoid fever complicated by cholecystitis is presented. Bile withdrawn from the duodenum after the instillation of magnesium sulphate showed the bacillus paratyphosus in culture. That this organism was isolated from bile B and not from bile A may or may not be suggestive. Subsequent positive findings in the stools while the bile was sterile may be interpreted in several ways. The continued presence of the causative organism in the stools may have indicated a continued source in an unhealed follicle or Peyer's patch. However, technical difficulties in duodenal drainage preclude the possibility of total withdrawal of biliary secretion; and thus it is probable that, even granting patent ducts, only in a fraction of the cases of cholecystitis will the exciting organism be determined by bacteriologic examination of the bile withdrawn from the duodenum. Nevertheless, it would seem a most logical procedure in all cases of suspected gall bladder infection; and particularly since this structure is a suspected offender in typhoid carriers, gall bladder drainage and bacteriologic examination of the bile should be a routine measure under these circumstances.

PURPURA HEMORRHAGICA.

ST. JOSEPH'S HOSPITAL CLINIC.

BY L. F. JERMAIN, M. D.,

MILWAUKEE.

Case No. 1. Mrs. A. P. Age 41. Widow. Entered the hospital January 13, 1922. Her husband died of tuberculosis. Father died of tuberculosis and mother died of carcinoma. There was nothing in her past history of any moment. There was no history of personal, or family tendency to hemorrhages.

About three weeks ago patient noticed small, red spots upon her limbs and body, also a few small dark blisters upon her face and lips. Upon opening the blisters dark blood escaped. She says that dark brown spots formed upon her face and lasted three or four days, also a bluish black discoloration of her limbs.

A week before entrance patient had a tooth extracted and since then has bled continuously from the socket. She became gradually weaker and for the past two days her urine was definitely bloody. There were no headaches, dizziness, diplopia, epilepsy or paralysis. For the past three weeks patient had been coughing, especially in the morning, the sputum being blood tinged. There was no dyspnoea, no pain, no edema. Her appetite was good. There was no gastric distress, nausea, or vomiting. The stools have been very dark in color.

Physical examination revealed a fairly well nourished individual, but markedly anemic. Head and scalp were negative. Pupils equal and regular, reacting to light and accommodation. No ptosis. Teeth in fair condition, but there was marked oozing of blood from the gums and a small area of discoloration on the roof of the mouth. A large blood clot was present in the socket of the extracted molar. On the lips were a number of small, dried, bloody crusts which, when removed, left a moist, oozing, bloody surface. Throat negative. There were numerous small petechial hemorrhages on the face. No enlarged lymph nodes. Thyroid gland not enlarged. The chest was covered with small petechial hemorrhages; expansion was good and there was no impairment of resonance, or abnormal breath sounds. Heart was not enlarged; rate and rhythm were normal and there were no murmurs. The skin of the abdomen was the seat of numerous petechial hemorrhages. Spleen and liver were not palpable. Both upper and lower extremities were the seat of petechial hemorrhages and ecchymoses. Her temperature on entrance was 99.8. Her pulse 100. Respiration 20. During her stay in the hospital her temperature was of an irregular type, ranging from normal at times to 101.4.

Examination of the urine showed definitely bloody urine which persisted up to the time of her death, at times having almost the appearance of pure blood.

Blood examination: Red blood cells 2,640,000; leucocytes 8,000; hemoglobin 60%; color index .1.

Differential count: Large lymphocytes 12%; small lymphocytes 3%; polymorphonuclears 85%. Red blood cells somewhat pale with moderate variation in size.

Patient was given 20 c.c. of thromboplastine twice daily for three days. It seemed as though from this time on there were no further petechial hemorrhages into the skin, nor any hemorrhages into the subcutaneous or muscular tissues. She continued to bleed, however, from this tooth socket, from the mucous membrane of the mouth, intestinal tract and from the kidneys. Four days after admission patient had a severe hemorrhage from the nose which was controlled with great difficulty and only temporarily.

Blood transfusion of 600 c.c. of citrated blood was administered. Morphine, grs. ¼, was given hypodermatically for restlessness, also on one occasion normal saline solution per rectum.

In spite of all treatment patient succumbed from loss of blood.

Case No. 2. Mrs. H. H. Age 55. Housewife. Entered the hospital February 3rd, 1922, with a diagnosis of probable gangrene of two toes. Her personal and family history have been uneventful. She has two children living and well. Menopause at 45. There was no history of bleeding in the family.

Four days ago patient was taken with a severe pain in the left leg, pain extended from the left knee to the toes. The left foot and part of the leg became swollen almost simultaneously with the onset of the pain. Two toes became bluish black in color. About the same time large black discolorations appeared on the calves of both legs. She complained of a great deal of pain in the knee and ankle joints. There appeared to be some swelling of these joints which was not due to the hemorrhages in their vicinity. Her temperature on entrance was 100. Pulse 108. Respirations 22.

Physical examination: Head and scalp negative. Pupils equal and regular, reacting to light and accommodation. No ptosis or nystagmus. Teeth—uppers and lowers false. Tongue clean. Throat negative. No enlarged lymph glands. Thyroid not enlarged. Some visible pulsation at the root of the neck. Chest negative. Lungs negative. Heart—apex beat rather diffuse in the sixth intercostal space; no murmurs. Second pulmonic accentuated. Rate 108. Rhythm normal. Spleen and liver not palpable. Both lower extremities swollen. Two toes on the left foot black in color. Marked ecchymoses in the subcutaneous and muscular tissues of both lower extremities. Careful examination of the toes, however, revealed no gangrenous process, but simply hemorrhage into the tissues.

Urinalysis showed the specific gravity 1028; albumin positive; sugar negative; numerous red blood cells; no casts or pus.

Blood count: Red blood cells 3,180,000; leucocytes 6,000; hemoglobin 80%. Differential count: Large lymphocytes 21%; small lymphocytes 11%; polymorphonuclears 64%; eosinophiles 2%; myelocytes 2%.

Her temperature was of an irregular type ranging from 98.8 to 102.4.

In spite of treatment which was similar to that ad-

ministered in Case 1, patient continued to have subcutaneous hemorrhages with bloody urine, some hemorrhages from the mucous membrane of the intestinal tract, also a sever hemorrhage from one ear, and died with dilated pupils, Cheyne-Stokes respirations, conjugate deviation of the eyes and other symptoms of cerebral hemorrhage.

DISCUSSION.

In the differential diagnosis of any case in which bleeding into the skin, the subcutaneous tissue and mucous membranes is clinically manifest, we must consider—

First, hemophilia; second, scurvy; third, blood diseases, such as the acute leukemias, aplastic anemia and pernicious anemia; fourth, the splenomegalies, such as splenic anemia or Banti's disease, Osler's disease, Gaucher's disease, Von Gotsch disease and congenital or acquired hemolytic jaundice; fifth, the cachexias; sixth, drug purpuras; seventh, the infections.

Hemophilia is a disease which is very rare in the female. It is, as a rule, transmitted by the female to the male offspring only. In neither of these cases was there obtainable any history of personal, or familial tendency to inordinate bleeding.

Scurvy is distinctly a deficiency disease due to the lack of certain food substances—vitamins. There was no evidence in either patient of undernourishment, nor was there any history of a poorly balanced diet such as gives rise to scorbutic manifestations.

Blood examinations at no time revealed any evidence of acute leukemia, aplastic anemia or pernicious anemia. The blood findings in both cases were simply those of a secondary anemia, due to infection and loss of blood.

There was present at no time any splenic enlargement. The group of diseases characterized by splenomegaly and a tendency to hemorrhage were thereby excluded.

Cachetic purpuras are usually of the simple variety, are rarely associated with hemorrhages from mucous surfaces or into internal organs and occur chiefly in chronic debilitating diseases and in the aged.

It is a well known fact that iodides, particularly in the form of iodide of potash, mercury and other drugs, in susceptible individuals will often give rise to purpura. As neither of these patients had been taking drugs of any kind this type of purpura can be positively excluded.

We are, therefore, by a process of elimination, forced to a classification of both of these cases among the infectious group of hemorrhagic purpura.

Purpura as such is only a symptom and not a disease entity, hence such designations as purpura rheumatica, peliosis rheumatica and Schoenlein's disease should be definitely discarded. Furthermore, purpura is a symptom in so many diseases that a diagnosis, for instance, of scorbutus based solely upon the presence of petechia and ecchymoses in the skin and subcutaneous tissue or muscles of the lower extremities is an exceedingly precarious one.

Hemorrhagic purpura may occur in any and every infection. The simple purpura, purpura hemorrhagica and purpura fulminans are perhaps types of the same condition of varying degree of virulence, depending upon the virulence of the infection and the degree of resistance of the individual. Hemorrhagic types of measles, typhoid fever, scarlet fever, diphtheria, malaria and smallpox are not uncommonly noted. In typhus and cerebrospinal meningitis the hemorrhagic type is the rule. All virulent septicemias are apt to be accompanied by hemorrhages into the skin, internal organs and from mucous membranes. Probably the most common type of purpura is that seen in streptococci arthritis. This type, however, is usually of the simple variety, the hemorrhages being limited to petechia and ecchymoses in the skin and subcutaneous structures of the lower extremities. Only occasionally one sees purpura fulminans, a highly malignant type of disease complicating an acute arthritis in which the patient is apt to succumb, even before hemorrhages from the mucous surfaces become manifest.

In the treatment of infectious purpura there are no specifics. It should be our aim to support the patient in every way possible until a resistance toward the invading organisms can be developed. Thromboplastine should be freely employed as well as blood transfusion with the object of tiding the patient over to such time when he can overcome the infection. Fortunately, most infectious purpuras, particularly those accompanying streptococcus arthritis, are mild and of the simple variety and recovery takes place.

Scorbutic purpura can usually very readily be arrested by an appropriate diet of fresh vegetables, orange juice and other fruit juices.

MILWAUKEE COUNTY HOSPITAL CLINIC

BY LOUIS M. WARFIELD, M. D.,

MILWAUKEE.

One has heard so much about various special means which reduce hypertension, that the following case seems of interest in this connection principally due to the variations in blood pressure under no medication.

Case No. 1. A scrub woman of 59 years was admitted to the Milwaukee County Hospital on November 18th, 1921, complaining of pain over the lower back with tenderness of the muscles, for about a week. She also had a pain in both lower legs for sometime past. She was not acutely ill when she entered the hospital. Her temperature was normal, pulse regular, 100 beats to the minute, respirations 24. There was slight edema of the lower legs and varicose veins.

Her mother died of "dropsy" when only 45 years old. She herself had had no serious illness in her life, she had always worked hard. For sometime she had had nocturia, two or three times at night. Her present illness dated rather definitely from November 11th when she developed pain in the back, hips and legs. She was forced to go to bed. For the past year, also, she had had fainting spells with transient attacks of dizziness.

On physical examination she was found to be a large, fleshy woman with no abnormal findings except on the part of the heart and lower legs. The apex beat of the heart was felt in the 6th left interspace 14cm. from the midsternal line. The sounds were somewhat muffled but clear. The second aortic at the base was accentuated. The rhythm was regular. The legs were as described above.

Urinalysis was negative on several occasions, microscopic examination revealed no casts. Both the blood and spinal fluid were negative to the Wassermann reaction.

The blood examination was: hemoglobin 50% (Tallquist); reds 2,360,000; whites 6,700. Her temperature was never elevated.

Phenolsulphonephthalein on November 22nd was: 1st hour 15%, 2nd hour 5%. On December 10th, 1st hour 40%, 2nd hour 10%.

The blood pressure readings were as follows:

	Systolic	Diastolic
November 16 (entrance)	230	130
November 21	220	125
December 12	170	120
December 16	154	110
December 21	158	115
January 6	185	110
January 10	175	105
January 14	190	110
January 24	200	115
February 5	205	115

She received no medication. For four weeks she was kept in bed, she was given purgatives when necessary and a diet in which meat was largely eliminated. At present she is feeling quite comfortable except that her varicose veins annoy her when she is on her feet for long.

COMMENT.

There are several interesting points about this very common type of case. In the first place there is a history of dropsy (chronic interstitial nephritis?) in her mother, the hereditary element. She probably began life with blood vessels which were poor in resisting quality for the wear she would give them. She must have worked hard to gain a livelihood. Until the pain in her back began one week before admission she did not know that there was anything the matter with her. She had always done her work and considered herself strong and well. The fact that she had to get up two or three times a night to urinate was only found out by asking her the direct question. She made no complaint of it. She probably sprained her back, or it may have been a sacro-iliac strain which caused her to be brought to the hospital.

Was the edema of the legs due altogether to the varicose veins or was it evidence of cardiac decompensation? The evidence favors the latter assumption. Note that on entrance (that means after she had been lying in bed an hour or two) the pulse was 100. Now, rapid pulse alone may be all the sign found in the cardiovascular system to indicate failure of the heart to maintain the circulation in equilibrium. Then there was edema of both legs which disappeared in two or three days, and lastly, but important, the 'phthalein test showed 20% in two hours, five days after admission and 50% three weeks later. This would indicate some passive congestion of the kidneys due to sluggish circulation, as the urine was normal.

A further important point showing that the kidneys were only temporarily below the normal function is the relationship between the output in the first and second hours. On both occasions the large part was secreted in the first hour. This is normal. Had the output been 50% in two hours divided equally between the first and second hours it would have meant that there was definite functional incapacity of moderate grade in spite of the 50% output. However, in this woman the ratio was 40% first hour, 10% second hour. We have every reason to feel that her kidney is functioning normally and that she has not chronic interstitial nephritis.

What about the hypertension? This is interest-

ing. One can see how the systolic pressure fell from 230 to 154 m.m. on rest alone. Suppose she had had salt baths, electric treatment, etc., etc., would not this have been a brilliant result? She had nothing but bed rest and a very slim diet. Then note that on January 6th the systolic rose to 185 m.m. She had been up and about for a week or two. She continued to be up and to do a little work in the ward hence her pressure has remained around 200 m.m. Now, note again that the fluctuation of the systolic pressure was from 230 to 158 or 72 m.m. Hg. The diastolic on the other hand dropped only 25 m.m. at it's lowest drop. Observe too that while she was quiet in bed the pulse pressure became the normal value, viz: 44 m.m. Hg., but as soon as she was up it rose again suddenly to 75 m.m.

This is just what happens in practically all of the cases of this type. This is what I call the "essential hypertension" group. Both systolic and diastolic are high and the kidney shows no abnormality. In a majority of cases there is a history of Bright's disease or of apoplexy in one or more immediate ancestors.

This case illustrates many points which I have been attempting to emphasize for many years. It shows in a most striking manner the folly of attributing a marked reduction of pressure to any particular method of treatment. I am convinced that such hypertension as this patient has is a compensatory process. She must have a large pulse pressure in order to live comfortably. As long as she lies quietly in bed she needs only 44 m.m. of pressure to force the blood to the periphery. But when she is exerting herself ever so slightly a larger head of pressure is needed and so we find 70-75 or 90 m.m. of pulse pressure.

I know of no means to reduce hypertension to normal values. If I did I would not use it unless I could reduce the diastolic pressure as well so that the pulse pressure would be sufficient to keep the vital centers supplied with blood. To reduce the systolic and not to reduce the diastolic has brought on fainting spells and has made patients worse. This has been done in selected cases by large doses of nitroglycerin. It is not advisable. The patient may be harmed, he certainly is not benefited. Practically all we can do for these hypertension cases is to regulate their diet and their daily life so that a minimum of strain is placed upon the heart and blood vessels.

Gonorrheal endocarditis is fortunately an unusual complication of the specific urethritis. Since the first case reported in this Country by Thayer and Blumer, twenty-five years ago, about fifty cases have been put on record. The following case was at the Milwaukee County Hospital last summer.

Case No. 2. A young white divorcée, 24 years old was brought to the hospital on a stretcher July 23, 1921. She was acutely ill with fever, rapid pulse and increased respirations. She told us that her illness had begun twelve days ago with chills followed by fever and vomiting. She had to take to her bed. Since then at daily or every other day intervals she had chills, sometimes accompanied by vomiting. She had also had sharp, transient pains in the pit of the stomach. For the past few days there has been a choking sensation extending from the throat to the stomach. She has had a hacking cough and two days ago she was jaundiced.

Her past history was quite negative. She denied ever having venereal disease, even denied the existence of leukorrhea while living with her husband.

On admission she appeared quite ill. She lay recumbent in bed, the color was good, there was no icterus. The respirations were shallow, 30 to the minute. She frequently gave a dry cough. She did not seem to be in pain but her respiratory embarrassment was apparent. She was a very well developed and nourished young woman. There was slight impairment of the precussion note at the lower right back, the vocal resonance was slightly decreased but the breath sounds were not much changed. The heart did not seem to be enlarged (superficial examination), the rate was 115, regular. There were systolic and diastolic murmurs at the base best heard at the pulmonic area. The first sound at the apex was feeble and there was a diastolic murmur there. The abdomen was soft but somewhat tender above the navel. The liver was palpable, there was no edema.

The leucocytes were 20,000.

The next day she had mild epistaxis. The day after she complained of severe pain under the left shoulder and in the epigastrium.

On July 26, when a more careful physical examination was made, she was then unable to recline in bed, the respirations were rapid and shallow. The carotids throbbed. Over the lower borders of both lungs there were a few rales more pronounced on the left side. The apex of the heart was in the 6th intercostal space 13 cm. to the left of the mid-sternal line. A presystolic thrill was easily felt. Both a presystolic and a systolic murmur were heard at the apex almost replacing the first sound. Over the base a to and fro murmur was heard. No definite friction was audible. The pulse was 120, regular.

The abdomen was tender everywhere, no area more than any other. The liver was enlarged, the edge extending 2cm. below the costal border. Bimanual examination of the pelvic organs revealed a retroflexed uterus and slightly enlarged and tender tubes, espec-

ially the right. There was no edema. The pupils reacted normally, the knee jerks were sluggish.

The temperature was irregular, from 99° to 103°. The urine was negative. A blood culture was taken and a request made for complement fixation test with gonococcus antigen.

On the 27th there seemed to be flatness in the Traube semilunar space and friction rub over the body of the heart. The apex had not changed position but the murmurs had changed, only a murmurish quality to the first sound was heard. There was dulness, crepitant rales and friction rub over the lower left back.

On the 28th the liver edge was distinctly lower, the patient was more dyspneic. The area of cardiac flatness was increased especially to the right. Paracentesis of the pericardium was done. About 4 c.c. of bloody fluid which coagulated quickly were withdrawn. No further fluid was taken.

On July 29th the leucocytes were 16,600, the general condition was worse. The heart sounds were not so feeble as on the day before. The murmurs were heard.

Report from the laboratory was pure culture of gonococci from the blood and four plus complement fixation for gonococci. The W. R. was negative.

July 30 the patient admitted a most irregular sexual life since her divorce. Four weeks before admission she had had intercourse and three days later she had a white vaginal discharge. Then for several days her "womb and ovaries" pained her. She kept at work however. She said that she had been examined by physicians before this time but they assured her that she never had gonorrhea.

Her condition failed rapidly. A few mosquito bites became purpuric blotches. On the right arm was a 3x4 cm. purpuric area. Petechiae appeared over the chest and abdomen, anl conscious up to death, she died August 1st, about ten o'clock.

Briefly, the autopsy showed a dilated heart with no excess pericardial fluid, the epicardial and pericardial surfaces were smooth and glistening. About the center of the right ventricle was a small hemorrhagic spot where the aspirating needle had entered the cavity of the ventricle. Upon opening the heart the whole of the aortic valve was covered with ulcerating warty vegetations. The Fallopian tubes were slightly swollen and red but contained no pus. All the organs showed extensive cloudy swelling.

COMMENT

Until the report of the blood culture we thought we were dealing with a case of pericarditis with effusion. At first the patient strenuously denied any venereal infection. She maintained that she had led a blameless life since her divorce. We were however, suspicions enough to have the complement fixation test done. The report did not come back from the laboratory for several days. In the meantime, the history of onset, the increasing dyspnea, with shallow respiration and rapid heart, the increase in size of the heart, the dislocation of the liver downwards, what we thought was a friction rub and the change in the character of the heart sounds seemed justification for the diagnosis of pericarditis with effusion. Puncture was made with a fairly large needle, entering the skin at the angle made by the left ribs with the ensiform cartilege. The needle was directed upwards and inwards. As soon as suction was made a bloody fluid was drawn into the syringe. At once it was realized that puncture of the ventricle had been made. The syringe was quickly withdrawn. We were somewhat alarmed because we feared that as pericarditis was evidently not present we might have caused leakage of infected fluid into the pericardial sac and a pericarditis would result. We were naturally anxious to see the heart. The small hemorrhagic spot on the surface, not seen at first but only after careful inspection, was the only evidence that the ventricle had been punctured. There was no inflammatory reaction at the site of the puncture, what pericardial fluid was present was not in excess and was perfectly clear. I would not care to puncture the human heart as a routine procedure in order to obtain blood, but I am sure that it can be done without harm to the patient. It was then evident that there was some sort of septicemia. The next day the laboratory reported gonococci in blood culture. We knew then that we had a gonorrheal endocarditis.

The question then arose did the patient deliberately lie to us or did she not know that she had gonorrhea? With the data from the blood culture as a lever she then told the true story. But not all was told, for we learned later that she had been most promiscuous in her sexual relations.

How rapidly the infection spread can be appreciated when we consider that from the date of her fatal intercourse to her death was less than six weeks. This is quite unusual. Further she did not have purulent salpingitis. Her tubes were only slightly swollen throughout their whole extent and no purulent secretion was found in them. The mucosa of the uterus was only a little reddened and swollen.

Both sexes have developed endocarditis as a complication of acute gonorrheal urethritis. I have had under my care four cases, two men and two women. This case was the most acute one I have seen and I know of no case in the literature where

the time between infection and death was less than six weeks. It demonstrates anew that the gonococcus is a dangerous bacterium and that what is usually a local disease may suddenly develop serious complications ending in death. No case of gonococcus endocarditis has recovered.

UNIVERSITY OF WISCONSIN MEDICAL SOCIETY MEETING

March 8, 1922.

1. "Some Experimental Observations in Non-specific Immunity," by Dr. P. F. Clark. Dr. Clark introduced the subject by quoting the statistics of Dr. Van Valzah on the incidence of acute infectious diseases in urban as compared with rural population. Figures on admission determined much higher incidence of communicable diseases among the urban than among the rural students. Subsequent morbidity in the university reverses these figures. For instance, in a certain epidemic 31% of the cases occurred among short course students who are largely from agricultural districts and who constituted but 10% of the total student population. These observations have been borne out by the studies in cantonments by Love and Davenport, Vaughan and Palmer. The mortality and morbidity from measles, mumps, chicken pox, influenza, pneumonia, and cerebrospinal meningitis bore an inverse ratio to the density of population of the district from which the recruits had been derived. The factors, Dr. Clark went on to discuss, were—first, the incidence of communicable diseases being higher in the city, led to a specific immunity. This group would include both recognized and unrecognized cases. Clark stated that the immunity to diphtheria, for instance, was higher in the slum school children than in the school children of the residential districts, New York City, because of these facts. Second, there is a natural selection in cities whereby a survival of the fittest occurs in dense populations. Third, the thought of a repeated injury with a subsequent repair and therefore compensatory hyperplasia in the anti body reacting or forming tissues is suggested. With this last point in view two series of rabbits were studied. The first to be considered, the country dwellers, were kept under most sanitary conditions whereas the second were, under similar conditions, treated by repeated vaccinations with the common cocci, streptococcus, pneumococcus and staphylococcus, over a period of several weeks. The injections were made intravenously. Then, to determine whether non-specific immunity or increased resistance had been developed, both groups were infected by an organism of diametrically opposite characteristics. The Bacillus typhosus was chosen since it was bacillary in morphology, Gram negative in staining reaction and inducing leucopenia. Sublethal doses of Bacillus typhosus were given first intravenously. Four out of five of the country dwelling group died whereas only one out of five of the city dwellers succumbed. The titer of agglutins in these animals was tested and the city dwellers ran up to 1-1360 whereas the country dwellers showed only 1-480. A second series of experiments was undertaken to determine the effect of entirely different routes of infection for the bacillus typhosus after a similar preparation of the city dwelling group. The only difference determined was somewhat lower titer of agglutins in the city dwellers than under conditions previously pertaining. In conclusion, Dr. Clark stated that an apparent non-specific immunity of appreciable degree had been induced against organisms of an entirely different group. He covered the field of non-specific therapy and pointed out some of the problems under contemplation. This paper was discussed by Drs. Eyster, Dawson, Van Valzah, and Professor Guyer.

2. "Articular Discs and Accessory Joint Structures," by Dr. W. E. Sullivan. Dr. Sullivan stated that this original work was undertaken by demonstration of simple and perfect articular structures in the codfish. He gave the four following theories of the function of articular disc: First, the adaptation of incongruities of opposing articular surfaces. Second, they represent vestigial skeletal elements. Third, they assist in lubrication of the joint. Fourth, they are shock absorbers. There are two factors in joint function apparently, mobility and stability. Dr. Sullivan stated that discs were frequently irregular and that their primary function in man was obscure by reason of this fact, whereas in the codfish they were simple and regular. There were two general types, both of which were biconcave and elliptical. In one the long axes of the concavity were parallel, while in the other they were at right angles. A modification is found in the concave convex form.

Dr. Sullivan then discussed the mechanical advantages and disadvantages of the several types of joints. For instance, he showed that two convex surfaces would permit of great stability and mobility, and the shoulder with its plane and convex surfaces represented by the glenoid fossa and the head of the humerus, gave wide range of movement likewise. The hip joint is a ball and socket joint and represents a group in which there is great mobility and stability. The diarthroses in the midline of the body are two plane surfaces in articulation and obviously are extremely stable but without great mobility. Two convex surfaces are quite mobile and there is no stability unless there be interposed a biconcave disc which will lend depth to the joint and bring about greater stability. For instance, the temporal mandibular joint is given freer movement by this means together with a certain amount of voluntary rotation. By a model Dr. Sullivan demonstrated the mechanics of a concavo convex disc in biaxial joints wherein the disc is fixed to one bone in one direction with movement on the first joint or the two together may act on the second articular surface and thus we have movement in three directions plus fair rotation. The elbow and shoulder joints were said not to possess true articular discs but accessory structures. Returning to the question of function, Dr. Sullivan stated that stability alone seemed to be affected by their removal and that they seemed not so much to change the direction of articulation as to stabilize the movements.

PREVENTIVE MEDICINE

Edited by
W. D. STOVALL, Chairman
Section on Preventive Medicine, State Medical Society of Wisconsin

This Section is open to all members of the State Medical Society and others who wish to discuss subjects pertaining to Public Health. Original articles, and criticisms of statements appearing in this section are earnestly solicited. Questions concerning public health procedure will be answered. Address communications to Dr. W. D. Stovall, State Laboratory of Hygiene, Madison, Wis.

DIPHTHERIA CARRIERS

BY W. D. STOVALL AND E. A. SCHEID,

MADISON.

The control of diphtheria from a theoretical standpoint should be a simple matter of isolation and quarantine of diphtheria patients, contacts and carriers until cultural methods show the absence of diphtheria bacilli from both the nose and throat. Since we know so well the cause of diphtheria and are able to readily recognize these bacteria in throat cultures, it is natural to expect that the control of the disease is a comparatively simple matter. The attempt to use this quite definite information, however, brings up many perplexing and troublesome problems. The chief of these problems is the lack of information in and outside of the medical profession on the diphtheria carrier. In the State Laboratory of Hygine during the last year we have been able to collect figures which have an important bearing upon the question of diphtheria carriers.

At the outset it is well to understand that carriers are classified as convalescent, contact and non-contact. The convalescent carrier is one who harbors diphtheria bacilli after recovery from the disease. The contact carrier is one who is harboring diphtheria bacilli due to close association with a diphtheria patient or a healthy carrier, and a non-contact carrier is one who gives no history of having had, recently at any rate, diphtheria and who has not come in contact with a known case of diphtheria. The contact and non-contact carrier may be termed healthy carriers of diphtheria bacilli.

Sometimes it is necessary to keep a convalescent diphtheria case in quarantine for weeks and months before the organisms disappear from the nose and throat. The cultures frequently show diphtheria bacilli long after the patient has regained health and after the mucous membranes have lost all signs of inflammation. Because of the necessity of these long periods of isolation it is important to know how long after recovery the organism may infest the mucous membranes of the nose and throat.

Weaver has reported figures secured from a study of 500 cases of diphtheria which were treated in the Durand Hospital. His figures show that after seven weeks less than 1% wielded positive cultures. He also makes the interesting observation that after the first week approximately half of the cases that began any week as positive became negative during the following seven days. Three weeks after onset 71.2% of his cases became negative, and at the end of four weeks 83.2% became negative. He used three negative cultures for release instead of two. He says that "the frequency

with which two negative cultures are followed by positive ones early led us to adopt three consecutive negative cultures taken at intervals of from one to three days from both nose and throat as a standard for release."

The carrier period for any case as demonstrated by cultures depends upon the care with which the swabs or cultures are made, and the number of negative cultures required for release. Hartley and Martin estimated the average stay in the hospital of patients released on one culture as 21 days, released on two cultures as 34 days and released on three negative cultures as 45 days.

It is, of course, impossible to perdict how long any patient will carry diphtheria bacilli. Weaver in his study of 500 cases found that of each 100 cases five or six may be expected to begin to show negative cultures after five days from the onset of the disease. In his study of 52 patients who entered the Durand Hospital as carriers, 55.8% became negative after two weeks and 80.8% after four weeks. In this study there were ten cases who continued to be carriers after four weeks. In four of these, positive cultures were obtained from the pharynx only, one from the nose only, and four from both the pharynx and nose.

In order to get more definite data on the diphtheria carrier, Moss, Guthrie and Marshall inoculated the throats of healthy individuals with avirulent diphtheria bacilli. They were able to isolate avirulent diphtheria bacilli from one of those inoculated 132 days after inoculation. The others ranged between 39 and 125 days. These same investigators inoculated the throats of another group of people with virulent diphtheria bacilli and showed that the carrier state in these endured from 33 to 57 days.

TABLE I

Table Showing Method of Release of Diphtheria Cases As Indicated by Records of State Laboratory of Hygiene

No. Cases	No Release Cultures	One Release Culture	Two Release Cultures
355	160	80	115

We became interested in the duration of quarantine as demonstrated by negative cultures on cases diagnosed diphtheria in the State Laboratory of Hygiene. In order to determine this point we selected 355 cases which the laboratory records show as diagnosed positive to diphtheria bacilli. Following these cases through the records we found, as indicated in the above table, that 45%, or 160 cases, were released without securing negative cultures. The only record we have of these cases shows only the primary culture for diagnosis. There were 23%, or 80 cases, who received only one negative culture, and only 32%, or 115 cases, who received the required two negative cultures. There were none showing records of three negative cultures as only two are required.

It is interesting to note the average period of quarantine for those who secured only one negative culture and those who secured two. The length of quarantine was arrived at by determining the date on which the initial diagnosis was made and the day on which the last negative culture was reported.

TABLE II

Table Showing Length of Quarantine in Relation to Release Cultures

No. Cases	No. Release Cultures	Average No. Days in Quarantine
80	1	17.7
115	2	19.9

Table II shows that those who received only one release culture had an average quarantine period of 17.7 days while those who secured two negative releases had an average quarantine period of 19.9 days.

The question frequently rises as to whether after all many carriers of morphological diphtheria bacilli may not be held in quarantine needlessly because of the avirulence of the organisms. Hatchel and Bailey found 97 out of 100 cultures from immediate contacts to be virulent. Wadsworth found cultures from convalescent carriers to be virulent in 92.5% and from contact carriers in 80%.

TABLE III

Table Showing Relation of Virulence to Morphology of Diphtheria Bacilli

	Sick Cases		Convalescent Cases		Healthy Carriers	
No. Cultures	Avirulent	Virulent	Avirulent	Virulent	Avirulent	Virulent
51	0	10	0	26	13	2

During 1920 and part of 1921 we tested the virulence of 51 cultures which were diagnosed

diphtheria bacilli from the morphology. Table III shows that of these cultures 10 were isolated from cases which were sick, 26 from cases convalescing from diphtheria and 15 from healthy people who were diagnosed as carriers. All cultures isolated from those sick with the clinical signs and symptoms of diphtheria gave a positive virulence test. All cultures isolated from convalescent carriers gave a positive virulence test. Of the 15 healthy carriers, 13 gave a negative virulence. Because of our experience we came to the conclusion that to do virulence tests on cultures isolated from convalescent cases was a waste of time and animals. Inasmuch as 100% of the tests on cultures isolated from convalescent carriers were virulent we decided to do no virulence tests on cultures isolated from convalescent carriers until the patient had been in quarantine at least two months.

Very much different results were obtained from cultures isolated from healthy carriers. Of the 15 cultures isolated, 13 gave a negative virulence. This result indicates the necessity of isolating and doing a virulence test on all cultures showing morphological diphtheria bacilli obtained from the throat of healthy individuals.

It has long been recognized that people in apparent health carry diphtheria. In 1902 a Committee of the Massachusetts Association of Boards of Health reported the result of an investigation into the frequency with which diphtheria bacilli are found in the throats of healthy individuals. They concluded that in urban communities from 1% to 2% of all well persons among the general public are infected, and that people exposed in families or schools where the disease is present the number of infected will run as high as 5% to 8%. Weaver says that available data shows that in close contacts the carriers may run as high as 36.6%, in hospital wards and institutions 14%, and among scholars in infected schools 8.7%. Goldberger, Williams and Hatchel found 38 out of 4,093 cultures, .928%, taken from healthy non-contact people in Detroit to contain morphological diphtheria bacilli. Gelein, Moss and Guthrie found diphtheria bacilli in 89 out of 2,507 cultures from healthy non-contacts, or 3.55%, and later cultures of 800 school children revealed 85 positive cultures, or 10.62%. These investigators isolated diphtheria bacilli from 33 of the 85 positive cultures and did virulence tests. Out of the 33 cultures containing morphological diphtheria bacilli, only 6 proved to be virulent organisms.

TABLE IV

Table Showing Results of Cultures of School Children for Diphtheria Bacilli.

No. Cases	Positive Cultures	Virulent Culture
1096	6	1

In the State Laboratory we examined from one rural locality during 1920, as part of our routine, 1096 cultures from the throats of school children. As shown in table IV, we obtained only 6, or .054%, positive cultures. Of these six cultures containing morphological diphtheria bacilli only one gave a positive virulence test. This low percentage of healthy individuals carrying virulent diphtheria bacilli may be accounted for by the fact that the people were rural dwellers, and therefore not so frequently exposed to the infection.

The carrier of virulent diphtheria is a menace to the community. The handling of these carriers is one of the most difficult problems. Frequently it is necessary to hold carriers in quarantine several months. They become restless, and, of course, are anxious to find some cure for the condition. The reason why these organisms lodge on the tonsil and mucous membranes of the nose and throat of some people and remain so long and in others disappear rather quickly is not clear. Some of the conditions which seem to establish a favorable condition to protract growth of these organisms in the nose, throat and tonsil is diseased conditions of one sort or another. Weaver has reported the persistence of positive diphtheria cultures from the nose of children who were later found to have foreign bodies in their noses. The removal of the foreign body was followed almost immediately by the disappearance of diphtheria bacilli from the nose. Diseased tonsils appear to favor the establishment of and to prolong the carrier condition. Abraded mucous surfaces and ulcers frequently are foci where diphtheria bacilli will remain and continue to multiply for months.

Many remedies have been suggested to prevent and cure carriers. Almost without exception these remedies have failed. Antiseptic gargles and nose washes have no specific value but are valuable in that they frequently aid in correcting other abnormal conditions.

Tonsillectomy has been reported as a successful

method of relieving those who carry diphtheria in the tonsil. Weaver has reported success from tonsillectomy. It is advisable in all carrier cases to have the nose and throat examined for deformities or other pathological conditions and institute treatment to remedy these defects. Frequently following the correction of deformities in the nose or removal of diseased tissue in the throat and nose the diphtheria bacillus will promptly disappear from the cultures.

The local use of antitoxin has no beneficial effect. The administration of antitoxin while effective in curing the disease does not seem to influence in any way the duration of the carrier state.

TABLE V

Table Showing Average Length of Quarantine for Cases Receiving Varying Size Doses of Diphtheria Antitoxin

Total Number of Cases: 156.

Cases	Units Antitoxin	Days in Quarantine
15	600— 4,000	18.1
90	5—10,000	15.9
45	10—20,000	21.
6	Over 20,000	16.

In order to see if the records of cases on file in the State Laboratory would furnish any information as to the effect of the administration of antitoxin on the carrier state, the histories of 156 cases have been studied. The records were examined with reference to the amount of antitoxin and day from the onset of the disease it was used. The average quarantine period was determined for the cases receiving various amounts of antitoxin. Table V shows that the average quarantine period for the cases receiving 10,000 to 20,000 units of antitoxin is longer than those who received much smaller doses.

The fact that the patients receiving the largest amount of antitoxin show a longer quarantine period does not indicate that the antitoxin is responsible for the continued presence of diphtheria bacilli in the throat, but rather that the size of the dose of antitoxin has no influence upon the duration of positive cultures following attacks of diphtheria.

It was thought that possibly a delay in the use of antitoxin might result in the patient carrying diphtheria bacilli for a longer period than one treated early in the onset of the disease. Accordingly the average quarantine period for those cases receiving antitoxin on different days during their illness was determined. Table VI shows the result of this study.

TABLE VI

Table Showing Relation of Quarantine to Duration of Disease and Antitoxin Administration

Total Number of Cases: 156

Cases	Day on Which Antitoxin Was Given	Days in Quarantine
20	Same day as diagnosis	10.5
35	One day after diagnosis	16.8
70	Two days after diagnosis	23.
21	Three days after diagnosis	19.
10	Four days after diagnosis	16.

It is seen that those who received antitoxin on the first day of the disease or before bacteriological diagnoses could be made had a shorter, 10.5 days, quarantine period than those who received the treatment later. There appears, however, to be no marked difference in the quarantine period and the days on which the treatment was administered up to the fifth day. Some variation in the length of the quarantine is noticed but does not appear to bear any relation to the day on which the treatment was administered.

SUMMARY.

The data presented in this paper indicates:

1. That the length of time which Virulent diphtheria bacilli will remain in the throat of convalescents cannot be predicted, and that the culture method for releasing diphtheria patients from quarantine is the only safe method.

2. That the carrier state is probably prolonged by such pathological conditions as diseased tonsils. and diseased conditions of the tissues of the nose.

3. That the average period of quarantine for patients from whom two negative cultures are obtained is 19.9 days. This period would undoubtedly lengthen if the patient were not released until three negative cultures are obtained.

4. That practically all convalescent carriers and a large percent of the contact carriers carry Virulent diphtheria bacilli, while a large percent of the so called healthy carriers carry non-Virulent organisms having the morphology of the diphtheria bacillus.

5. That the percentage of cultures taken from any group of people which will be positive to Virulent diphtheria depends upon contact conditions.

6. That the carrier state is not influenced in any way by the use of antitoxin. It seems however that the carrier conditions may be relieved by correcting any pathological conditions which exist in the throat and nose.

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PUBLIC HEALTH NEWS ITEMS

The truck which has been equipped by the State Board of Health to be used by the division of Child Welfare, and Public Health Nursing for conducting clinics throughout the state will be ready to start out early in April.

Physicians and health officers are not authorized to issue a certificate of freedom from any Veneral disease to any person except an applicant for a marriage license.

A conference of State Board of Health field workers was held in Madison on February 27-28.

Mumps is a reportable disease. In one community in the state 150 cases occurred during December, January and February, and no cases were reported.

The position of assistant collaborating epidemiologist should be regarded as an honorary position. This title was created by the United States Public Health service during the war for the purpose of carrying out better communicable disease control. The position has been filled by health officer, physician, and others engaged in public health work throughout the United States. The people holding this title have not drawn a salary, but were designed "dollar a year" men. Payrolls are not submitted except upon insistent demand.

A Chest Clinic has recently been conducted at De Forest. Seventy-five cases were examined. The results disclosed many cases of malnutrition, cases needing dental treatment, and several cases of goitre. All cases were referred to their family physicians.

The report of the State Laboratory of Hygiene shows a large increase in the work of the central and cooperative laboratories in the final half of 1921. The central laboratory in Madison received 19,619 specimens against 15,787 during the corresponding period of 1920. The cooperative laboratories received a total of 17,710 specimens. In all the laboratories there was received 37,329 specimens as compared to 21,586 during the same period of 1920.

The State Board of Health says that children having pink eyes are not permitted to attend school.

Milk which has been properly pastuerized has as much food value as unpasturized milk and is suitable food for children.

The Annual-State Conference of Public Health Nurses, will be held in August at the time of the biennial conference of health officers.

Miss Irene S. Slade, Cleveland, Ohio, has been appointed supervisor of visiting nurses in Beloit.

Miss Ruth Warner has been appointed school nurse at Whitewater.

There is a maximum price which can be collected from a municipality for diphtheria antitoxin. This rate is fixed for the Squibbs product for which the state has a contract. No town board

need pay more than this rate, no matter from what company it buys.

Dr. Robert Olesen, epidemiological aide with the state board, was ordered by the U. S. Public Health service to report to Bismark, N. D., to conduct a preliminary survey of North Dakota's state health organization, with a complete reorganization in view. He will return to his station in Madison pending further orders.

The State Board of Health offered the opinion that immunization to diphtheria by means of toxin-antitoxin affords the quickest and best method of insuring protection. Inasmuch as a large percentage of children under 5 and a majority of those between 5 and 11 are naturally susceptible to diphtheria, the immunizing treatment is strongly recommended to parents.

CORPUS LUTEUM EXTRACT IN THE TREATMENT OF THE VOMITING OF PREGNANCY.

Of forty-nine cases of vomiting of pregnancy discussed by E. L. King, New Orleans (*Journal A. M. A.*, Feb. 18, 1922), twelve were treated with extract of corpus luteum. Ten of these received corpus luteum only, while two received ovarian extract also. Nine were treated with ovarian extract alone. Twenty-eight patients received the usual treatment of sedatives, gastric lavage, colonic irrigations of sodium bicarbonate solution, forced fluids, etc.; two of this group were also given horse serum, with negative results. Five patients died. Of these, one aborted spontaneously and died soon after; one was aborted by vaginal hysterotomy, abortion by catheter was unsuccessfully attempted in one case; one patient treated along conservative lines died undelivered; the other patient received thirty-six doses of corpus luteum by mouth, twenty-one doses of ovarian extract by mouth, and fluids, sedatives, etc., in addition. Two of these five patients were given corpus luteum; the other three did not receive this treatment. Of the twelve cases in which corpus luteum was given, five were of the mild form, and were all cured. In four cases the results were not satisfactory, and the treatment was changed to sedatives, drips, etc., with steady improvement and eventual cure. One patient received twenty-six doses of corpus luteum extract intramuscularly and sixty-seven doses of ovarian extract by mouth; also drips, morphine, bromids, etc., and was finally cured. Another patient received corpus luteum extract, 4 grains (0.26 gm), orally, six doses; then "desiccated ovary" by mouth for six doses; then corpus luteum extract by mouth three times a day for ten days; then "desiccated ovary" three times a day for five days; also fluids, drips, sedatives, etc. This patient had a positive Wassermann reaction and some physical signs suggestive of pulmonary tuberculosis, but the sputum was negative. She died undelivered. The twelfth patient received five doses of ovarian extract, then six doses of extract corpus luteum, intramuscularly, and was discharged improved. She returned in three weeks, and was given nine doses of ovarian extract, followed by seven doses of corpus luteum extract. She grew steadily worse, and abortion was attempted by the use of a catheter. She died undelivered that night.

Nine cases were treated by ovarian extract alone, given orally in 5 grain (0.324 gm.) tablets. The patients recovered; but there was no conclusive evidence that the ovarian extract was of any value whatever. Of twenty-eight cases treated by sedatives, drips, etc., three patients died; one undelivered, one shortly after spontaneous abortion, and one several hours after evacuation of the uterus by vaginal hysterotomy. King does not share Hirst's enthusiasm over the corpus luteum treatment. It is his opinion that the best results are obtained by the use of sedatives, colonic irrigations of sodium bicarbonate solution, forced fluids, etc. Therapeutic abortion should not be too long delayed in refractory cases. Pinard's dictum to abort when the pulse is persistently above 100, while unduly radical, is a good guide, especially when considered in connection with the general condition of the patient and the laboratory studies of the blood and of the urine.

HEREDITARY HYPERTENSION AND ARTERIOSCLEROSIS.

It has long been felt that a close relationship exists between arteriosclerosis, chronic nephritis and certain degenerative changes in the heart, the terms "cardiorenal" and "cardiovascular renal" indicating the association. At the present time there is a tendency in medical thought still more completely to unify this group of conditions, and to regard them as the late stage of an essential hypertension which began many years before, the word "essential" being a cloak for our dense ignorance of the causes of elevated blood pressure. The case histories reported by Joseph R. Wiseman, Syracuse, N. Y. (*Journal A. M. A.*, February 11, 1922), of a brother and two sisters illustrate many features of this. Their father died of apoplexy at 58. Their mother of pneumonia at 74. Two other sisters are living and presumably well, whom I have not had the opportunity of examining. One sister died at 17 of organic heart disease following scarlet fever. The brother was 50. He had hypertensive cardiovascular disease; the heart and kidneys functioned well, but there was apparently generalized arteriosclerosis with marked affection of the cerebral vessels terminating in apoplexy. One sister, aged 57, presented no demonstrable evidence of arteriosclerosis save in the retina and aorta. Kidney function was fairly good, but the heart showed signs of early functional impairment. Hypertension has been observed for five years. The second sister, aged 44, presented hypertensive cardiovascular disease with good compensation.

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The Wisconsin Medical Journal, Official Publication

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Iowa	D. B. Hamilton, Dodgeville	W. J. Pearce, Dodgeville.
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Winnebago	F. G. Connell, Osbkosb	H. W. Morgenroth, Osbkosh
Wood	D. Waters, Grand Rapids	W. G. Sexton, Marshfield.

SOCIETY PROCEEDINGS

DANE COUNTY MEDICAL SOCIETY

The regular meeting of the Dane County Medical Society was held on Tuesday, March 14th, at 8 p. m. in the Board of Commerce Rooms, Cantwell Bldg., Madison. Dr. C. W. Hopkins, Chicago, Chief Surgeon of the Chicago and Northwestern Railroad, read a paper entitled "Fractures of the pelvis, complicated by dislocation of the head of the femur — end results," illustrated by lantern slides.

A meeting of the society was held on Tuesday evening, April 11, at 8 p. m. in the Board of Commerce Rooms, Cantwell building, Madison. A very interesting program was arranged as follows: The health situation in Madison at the present time, Dr. H. E. Purcell; discussion opened by Dr. Jos. Donovan; Plans for the future in regards to the Health Department, Dr. E. V. Brumbaugh.

Plans for the big Clinic Day on May 9 were discussed.

ALBERT TORMEY, M. D., *Secretary.*

MARINETTE-FLORENCE COUNTY.

A meeting of the Marinette-Florence County Medical Society was held at the Hotel Marinette, March 29th. Dr. T. J. Redelings presiding. Dr. L. M. Warfield, Milwaukee, lectured on the subject of "Abdominal Diagnosis," illustrated by lantern slides. A dinner was served at 6:30 followed by a short business meeting at which provision was made for the daily attendance of a physician at the Boy Scout camp during the summer. Twenty members of the society were in attendance.

MILWAUKEE ACADEMY OF MEDICINE.

A special pediatric program was given Tuesday, March 28th, at 8:15 p. m., by the Milwaukee Academy of Medicine, as follows:

Presentation of Clinical Cases and Specimens. Report of Cases of Exanthem Subitum, Dr. J. Gurney Taylor. Pyelocystitis—The Management of Refractory Cases, Dr. A. B. Schwartz. Mongolianism with Presentation of a Case, Dr. H. O. McMahon. Hemorrhagic Diseases of the New-born, Dr. F. C. Rodda, Associate Professor of Pediatrics, University of Minnesota.

The council reported at this meeting, in accordance with a resolution adopted at the last meeting, on plans of undertaking a building program. The problem of a home for our organization is one that has been occupying our attention for some time.

LAWRENCE G. SYKES, M. D., *Secretary.*

WALWORTH COUNTY

The Walworth County Medical Society held its March meeting at Whitewater, Wis., on the evening of March 15th, and nineteen doctors and their wives sat down to the splendid supper prepared by the landlord of the Walworth Hotel. After the supper and the social time which accompanied it the ladies went to the movies and the doctors settled down to the business of the evening. The applications of Dr. George Fay, Dr. Ella Chaffee-Fay and Dr. C. E. Dike of Whitewater were voted on and they were made members of the Society. The secretary reported the completion of arrangements for the putting on of the full "University Post-Graduate Course in Obsteries," the first number to be put on at Elkhorn, April 12th, beginning at 3:00 p. m.

The program for the evening consisted of a short clinic and then the lecture by Dr. W. D. Stovall of Madison University on the subject, "Laboratory Technique Applicable to Office Diagnosis." Dr. Stovall made the work so simple and plain that it seems a crime not to use all of it and it will surely stimulate the use of microscopes, stains and reagents throughout the county. Every doctor in the county is looking forward to the post-graduate work with enthusiasm and interest and the doctors of the adjoining counties are invited to come and enjoy them with us.

M. V. DEWIRE, M. D., *Secretary.*

WISCONSIN SURGICAL ASSOCIATION

At the annual meeting of the Wisconsin Surgical Association held in Milwaukee, Wednesday and Thursday, April 12th and 13th, Dr. F. J. Gaenslen, Milwaukee, was elected president; Dr. H. Reineking, Milwaukee, vice-president; and Dr. Daniel Hopkinson, Milwaukee, secretary-treasurer. Many prominent surgeons of Wisconsin appeared on the program, the session closing Thursday evening with a joint banquet with the Milwaukee Medical Society at the Hotel Pfister.

ASSOCIATION NEWS

OFFICIAL CALL

To the Officers, Fellows and Members of the American Medical Association:

The seventy-third annual session of the American Medical Association will be held in St. Louis, Missouri, from Monday, May the twenty-second, to Friday, May the twenty-sixth, nineteen hundred and twenty-two.

The House of Delegates will convene on Monday, May the twenty-second.

The Scientific Assembly of the Association will open with the General Meeting held on Tuesday, May the twenty-third at 8:30 p. m.

The various sections of the Scientific Assembly will meet Wednesday, May the twenty-fourth at 9 a. m. and at 2 p. m. and subsequently according to their respective programs.

HUBERT WORK, *President.*

THE ST. LOUIS MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The American Medical Association is a scientific organization but is composed of members with more than

the average amount of "humanity" in their make up with social elements too long repressed. These members are weary from bearing the responsibility of many human lives. Instead of having play time they have become public teachers with no recess. The local entertainment committee of the A. M. A. has been busy preparing to show these visitors true St. Louis hospitality and to provide for them such diversions as will be both restful and entertaining.

The Golfers will arrive early in order to participate in the Annual Tournament on Monday, May 22nd.

Tuesday evening the Opening Meeting will be held in the Odean and arrangements are being made to have the music and addresses transmitted by Radio to various parts of the city and to distant cities.

Wednesday evening is given over to Banquets such as Alumni, Fraternal, Sectional, etc. On this evening provision is being made to entertain the visiting ladies and those doctors who are not engaged at the Alumni and Fraternity dinners at one of St. Louis' noted Moving Picture Shows with special musical and other features for the occasion.

On Thursday afternoon the Medical Department of Washington University is giving a special Tea on the grounds of the institution. Thursday evening will be given over entirely to the President's Reception and it is hoped that as many as possible of the doctors and their ladies will grace the occasion with their presence.

The committee after visiting the offices of the Mayor and the Director of Public Welfare and being assured of their co-operation have decided to reserve until Friday evening the chief feature of their entertainment by giving a special program for the entire association in the unique open air Municipal Opera which has a comfortable seating capacity of ten thousand. The location of the opera in the heart of Forest Park with its special lighting effect made possible by the natural foliage of the forest can be appreciated only by those who visit it at night. It is the hope of the committee that every visitor at the convention will remain in St. Louis through Friday evening.

The Ladies Entertainment Committee under the leadership of Mrs. Willard Bartlett has arranged to take immediate charge of every lady visitor who may be persuaded to accompany the medical member of the family to the convention. They need have no fear of being left alone while the doctor is attending the scientific meetings for practically every hour of their time has been arranged for and it is hoped that many more ladies than usual will visit the "City of Homes"—"The Friendly City."

A special visit to Missouri Botannical Gardens is being arranged and will be an important item in the entertainment program. Among other features to be shown will be an old Italian Herb Garden. St. Louis is justly proud of its world famous Botannical Garden.

Take the whole week off, Doctor, and spend it in St. Louis. It will be time well spent. You may lose a patient, some may get well during your absence, but your increased vigor when you get back will abundantly make up for any losses. Come to our party for one full week.

Dr. C. E. Burford, 3525 Pine St., is Chairman of the Entertainment Committee.

CORRESPONDENCE

March 16, 1922.

Dear Sir:

The dates for the next two examinations of the National Board of Medical Examiners are as follows:

Part I and II, June 19, 20, 21, 22 and 23, 1922.

Part I and II, September 25, 26, 27, 28 and 29, 1922.

Applications for the June examination should be in the Secretary's office not later than May 15th, and for the September examination not later than June 1st. Application blanks and Circulars of Information may be had by writing to the Secretary, Dr. J. S. Rodman, 1310 Medical Arts Building, Philadelphia, Pa.

Kindly publish this statement in your Journal as soon as possible.

Very truly yours,

J. S. Rodman, *Secretary.*

To the Editor:

The articles on Fee Splitting in the February number of this *journal* bring up this disagreeable topic. Because I have never seen it put in what seems to me the correct light, I wish to venture the following as a method of settlement:

For example a family doctor is called to see a patient. He finds clinical signs of appendicitis. This is explained to the patient, who refuses an immediate operation. The doctor continues to attend the patient, at the end of forty-eight hours the patient has an appendiceal abscess. The patient is told that his life depends on an operation, which he then accepts.

Now it is plain this patient's life depended on an accurate diagnosis and prompt action, both of which the doctor did for him. To do this the doctor must have many years training and an alert and receptive mind, that he may arrive at an accurate conclusion.

Without the diagnosis the patient would never call the surgeon, showing that first and most important is the diagnosis made by the family doctor.

To sum it all up the doctor has made four calls to see the patient requiring two hours each time, made a white cell count of the patient's blood, then accompanies the patient to a distant hospital (as he should) also stays to assist with the operation that he may understand the condition of the patient, this trip requiring ten hours of the doctor's time, making in all about twenty hours time given to the patient as well as the knowledge.

The surgeon gives to the patient one hour of his time for operating and a total of one hour for aftercare, and collects $250 for himself. The patient lived to go home with the feeling that he owed his life to the

surgeon. Now in reality, what service did he perform to the patient? As I see it he supplied only the operative technique and thus only performed the duty of a highly trained technician.

At any event, I leave it to you as to who gave the most valuable service to the patient.

The surgeon skilled in diagnosis and treatment, could have supplied the knowledge given by the family doctor had he been called first (but he seldom is).

To settle the fee splitting problem it will need to be on the basis of the services performed for the patient as mentioned above.

The patient and surgeon must understand and agree, that the family doctor performed a service, at least equal to that of the surgeon. The family doctor having the interest of his patients at heart and being charitably inclined, will feel that the present fees usually charged by the surgeon, would be large enough to pay both the fee for diagnosis and surgery.

The above brings forcibly to mind the Compulsory Health Insurance problem. At the present prices charged by the various specialists, surgeons, hospitals and nurses, it is difficult for the laboring man's family to secure the services, beyond that offered by the family physician, when so done it is at a great sacrifice of the family needs. For this class of people it would seem that if the profession cannot or will not provide for the family's adequate means, at a price which they can pay, then we should not complain if others provide for their care.

The family doctor could scarcely have anything to loose by Compulsory Health Insurance and the rest of the profession have nothing to gain. The family physician is being gently informed that he is incompetent, lacking in education and useless, that the intelligent families are calling specialists for each kind of an ailment. Soon there will be no family physician to urge patients to see specialists and to advise operations, therefore these various specialists will have the joy of going to the patient's home to look for their own cases.

It would seem we are now in need of highly trained family physician, properly paid for the services performed.

The family physician is the first to see almost every person in need of a physician. These ailments include, with the lesser ills, most every case of the utmost severity, those where life itself depends upon prompt and accurate action, this fact is sufficient to show the need of the highest possible training for the family physician because of the fact a very high percentage of cases must be cared for at the time first seen and usually in the patient's home. The duty of treatment devolves upon the family physician showing more and more the need of training, that the family physician may properly treat these serious cases. I would venture a guess that nearly 90% of these people who are suffering from ailments serious enough to cause death die in their homes under the care of the family physician. But few of these patients have ever been in a hospital or under the care of a specialist.

In conclusion I would say that when the fees paid by the patients are properly distributed that there will be no need for fee splitting and the patients will not need to pay more. When the family physician is properly trained in diagnosis and treatment, there will be much less demand for the specialists, and the family physician, caring for many more of the serious cases than he now does, will find a fair increase in his yearly income and the patient's bills being such as to lessen the demand for Compulsory Health Insurance.

Wm. Fletcher, M. D.,
Salem, Wis.

NEWS ITEMS AND PERSONALS

Dr. C. E. Duncan, passed assistant surgeon, has been appointed on the staff of the U. S. Veterans' Hospital, Waukesha.

Dr. E. J. Brown, a graduate of the University of Wisconsin, class of 1919, and of Rush Medical College, 1921, has associated with Dr. C. F. Hess, Madison, for the practice of medicine, general surgery and obstetrics.

Articles of incorporation have been filed by the Memorial Hospital Association of Burlington, the plan being to establish and maintain a hospital at Burlington as a memorial to the veterans of the World War.

Dr. E. V. Brumbaugh, since 1914 connected with the health department of Milwaukee, has accepted the position of city health officer for Madison.

Fort Atkinson and Jefferson have re-elected physicians as heads of their municipal governments, Dr. W. H. Weld, Ft. Atkinson, being elected as mayor of that city and Dr. J. B. Brewer as mayor of Jefferson.

Dr. O. J. Wolfgram, Lyons, who removed from Fond du Lac to Lyons about ten years ago, has returned to Fond du Lac and taken over the practice of the late Dr. L. P. Hinn.

Dr. C. G. Dwight and Dr. Frederick A. Davis, Madison, have announced the opening of the Dwight and Davis Clinic for the care of diseases of the eye, ear, nose, throat and mouth in the new clinic building, 113 W. Washington Avenue, Madison. They also announce the addition to their staff of Dr. Eugene E. Neff, former house-surgeon at the New York eye and ear infirmary, and Dr. Richard L. Bower, former staff resident at the Michael Reese and Cook County Hospitals, Chicago.

Dr. J. C. Wright, Antigo, celebrated his 64th birthday anniversary, March 19th, with an elaborate birthday party, many old friends of the doctor being in attendance.

St. Agnes hospital is expected to have the best radiophone in the state as the result of the generosity of Fond du Lac citizens and other readers of The Commonwealth in other parts of the county. Persons in all sections have taken an interest in the movement to have

the radio-phone placed in the hospital for the benefit of the patients, and contributions have been received from Waupun, Ripon and other points.

Farewell testimonials were offered March 29, to Dr. E. V. Brumbaugh, deputy commissioner, and Dr. C. J. Kenney, epidemiologist, and Dr. William A. Matushek, residing physician at Southview hospital, Milwaukee, at a banquet held by the division heads of the health department at the Wisconsin hotel.

Dr. Philip R. Fox, Sr., was honored at an informal family dinner in honor of his 82nd birthday anniversary given by his daughter, Miss Kathleen, at their home, Fox Hall, near Oregon, March 19.

"After four years and five months' silence, discovery is made that the first member of the American Expeditionary Force to be killed in France during the world war was not a doughboy, but a physician—Dr. William R. Fitzimmons of Kansas City, Mo., a lieutenant in the Medical Corps attached to Base Hospital No. 5.

"Heretofore credit for the first sacrifice has been given to a doughboy and a monument erected to his memory in the Toul sector commemorating the spot on which he gave up his life. In the same belief the French awarded a citation to the father of Private George Ashburn of the First Division as the first victim offered by America to the Allied cause.

"Now investigation discloses that Dr. Fitzimmons, while assigned to the British forces at Dannes-Camiers, was killed on Sept. 15, 1917, by a German bomb dropped at night in the town. The same bomb killed two other members of the corps and wounded three physicians and two privates, one of the physicians being Dr. T. D. Smith, Neenah.

"While belated, the announcement now definitely fixes medicine's place on the honor roll of the war where it properly belongs and we are now satisfied. Marking the achievement of his youth, American medicine ought now erect a tablet in the town where Dr. Fitzimmons fell."—Neenah Daily News.

Dr. Frederick R. Green, who has been connected with the headquarters office of the American Medical Association since the year 1905, and has served as secretary of the Council on Health and Public Instruction since its organization in 1910, has resigned, the resignation taking effect on March 31. Dr. Green has formed a partnership with Dr. C. St. Clair Drake and Dr. John Dill Robertson for the publication of *Health*, a popular monthly magazine.

To avoid confusion between the Milwaukee Medical Society and the Milwaukee County Medical Society the Milwaukee Medical Society is to be known as the Milwaukee Academy of Medicine henceforth.

Officials and attendants at Resthaven, government hospital at Waukesha, were cleared of negligence or actions contributing to the deaths of three former service men at the hospital, by testimony given at the inquest.

Dr. W. J. Schmidt was re-elected mayor of the city of Mayville without opposition.

A large lobby, with a tile and terraza floor, a good-sized, well furnished and lighted waiting room for guests, two new classrooms, a demonstration room and a library for the nursing staff are the features of $16,500 alterations on the Madison General Hospital. The work has already begun.

The Oshkosh Social Medical Society was entertained at the Kandleglow Tea Room by Dr. W. N. Linn Wednesday evening, April 6. Dr. Bertha Thomson gave a paper on "Backward Children," and clinical cases were shown. Miss N. Davies gave an interesting talk on the method of teaching children who are backward. The Social Medical Society was organized about three months ago and has a membership of twenty-two. Some profitable and interesting meetings have been held and the members are confident of a successful year.

Dr. J. Wenzel was chosen president of the staff of St. Joseph Hospital, Ashland, this week, Dr. M. L. Young, vice-president, and Dr. George Harrison, secretary.

War work which got Dr. Jim Evans, worthy son of a sire known to most La Crosse folks, a wound stripe and the Croix de Guerre in 1917, has brought him a further reward in the shape of a scholarship for study in France. Doctor Jim, one hears, is to sail again across the Atlantic very shortly, this time without a guardian destroyer or submarine drill to enliven the journey, and will spend a year under masters of surgery in Paris. The scholarship was bestowed in recognition of his war service by the American Ambulance Service, which is thus honoring certain of the more outstanding of its veterans who were at the front even before Uncle Sam recognized that he had a fight on his hands. Jim Evans was overseas, one recalls, in March, 1917, driving an ambulance with the French army. He was wounded when a shell burst over his ambulance as he was evacuating poilus from the front during a big offensive, and shortly thereafter was in due form decorated and kissed on both cheeks by a bearded French general.

A special rate of one and one-half fares has been announced for the round trip, going and returning the same route, for the convention of the A. M. A. at St. Louis, May 22-26. In order to secure the rate the purchaser must present an identification certificate to the ticket agent when buying the ticket. Identification certificates may be obtained from Dr. A. R. Craig, Secretary American Medical Association, 535 N. Dearborn St., Chicago. When making the request please enclose a self-addressed, stamped envelope for reply.

The public health service hospital at Waukesha and fifty-nine others in the country will become Veterans' bureau hospitals under an executive order of the U. S. government.

Pursuant to a resolution recently adopted at a meeting of the Ashland, Bayfield and Iron County Medical Society that the president of the society should appoint three physicians from each county to act as an advisory council to the superintendent of Pureair Sanatorium, Dr. M. L. Young, the president of the Tri-County Medical Society has approved the following: Ashland County: Dr. Dell Andrus, Ashland; Dr. C. W. Lockhart, Mellen; Dr. J. H. Gates, Glidden; Bayfield County: Dr. Mertens, Bayfield; Dr. A. A. Axley, Washburn; Dr. F. G. Johnson, Iron River; Iron County: Dr. H. F. Ringo, Montreal; Dr. T. J. Hambley, Hurley; Dr. C. C. Urquhart, Hurley. Dr. F. G. Johnson, of Iron River, has been appointed temporary chairman to call a meeting of the Advisory Council in order to effect a working organization.

Dr. Mabelle M. Park, Seattle, Washington, formerly of Waukesha and a University of Wisconsin graduate, has been appointed director of the State Child Welfare bureau created by the 1921 legislature. Dr. Park will create and organize the new bureau, which, as a part of the state board of control, will perform preventive work among the neglected and delinquent children over the state. The legislature appropriated $15,000 for this department.

Dr. William Thalhimer has announced that he is associated with Dr. Edmund H. Mensing in the practice of surgery and surgical diagnosis, Colby-Abbot Bldg., Milwaukee.

The medical profession is honored in the appointment of one of its members to the President's Cabinet. Dr. Hubert Work, President of the American Medical Association, who has been serving as assistant postmaster general during the present administration, and has now been appointed Postmaster General, is the first physician thus honored since Dr. James McHenry served as Secretary of the War in the cabinets of Washington and Adams. Dr. Work is eminently capable of filling the position in which he has been placed.

DEATHS.

Dr. George E. Love, Waukesha, died at his home, March 31st, following a long illness. Dr. Love was born March 9, 1867, in Waukesha township and was educated in the public schools of Waukesha and at Whitewater Normal, graduating from the medical college of Northwestern University in 1894. He began the practice of medicine at Pewaukee where he acted as health officer for many years. He removed to Waukesha in 1903, and was elected mayor of that city in 1913. He was a member of the Waukesha County, Wisconsin State and American Medical Associations.

Dr. Max Schnug, Durand, dropped dead while on his way to visit a patient, Sunday afternoon, April 2nd. Dr. Schnug was born in 1870 and graduated from the Milwaukee Medical College in 1905. He practiced in Nelson for a number of years, locating in Durand about three years ago. He was a member of the Dunn-Pepin County, Wisconsin State and American Medical Associations.

Dr. Arthur A. Metcalf, a former practitioner of Florence, Wisconsin, died in Yakima, Washington, where he had resided for the last two years, late in March. Dr. Metcalf practiced in Florence in the early days and had a large acquaintance among the old settlers. He also had practiced in Crystal Falls, Green Bay, Dunbar and Hancock. He was 68 years of age.

Dr. Gilbert Shepard, former resident of La Crosse died at his home in Santa Cruz, Cal., according to word received by friends recently. Born in New York 84 years ago, he received his early education in the public schools, then was graduated from Beloit college with the class of 1866, and four years later was graduated in medicine from Hahnemann Medical College, Chicago. In 1863 he enlisted in Co. M., First Wisconsin cavalry, and served until the close of the war. Dr. Shepard lived in La Crosse for many years.

A DIETARY CONSIDERATION OF ECZEMA IN YOUNGER CHILDREN.

In about 20 per cent of the cases analyzed by Edward Scott O'Keefe, Boston (*Journal A. M. A.*, Feb. 18, 1922), there appeared a lowered fat digestion, shown either in the form of free fat or as a definite excess of soap in the stools. In about half this number, or 10 per cent, there has been evidence, clinical or laboratory, of a carbohydrate indigestion. All patients are subjected to protein skin tests. In considering the results of these protein sensitization tests, the patients are divided into: (1) the breast fed and (2) the bottle fed and older children. Among the 131 cases of the second class there occurred forty-five instances, or 35 per cent, showing sensitization to one or more of the common food proteins. The foods showing a positive reaction are, in order of frequency, egg, milk, potato, wheat and oat, and an occasional reaction among other foods. The aim of treatment in these cases has been to eliminate, when possible, the offending protein. When this is not practicable, as in the bottle fed baby, the aim has been to secure as thorough a gastric digestion of the protein as is possible. This was sought by careful regulation of the diet in order that it might be proper for the child's age and digestive powers. Any factor in the diet which interfered with thorough and complete digestion of the protein was eliminated. None of the breast fed babies gave any evidence of a fat or a carbohydrate indigestion. Sixty per cent of them did give evidence of a protein indigestion, as manifested in the positive cutaneous reaction.

The aim of treatment should be to secure complete digestion of ingested protein, either by improving the digestive function or by limiting the intake of offending proteins. Sensitization of the nursling apparently does occur through foreign proteins ingested with breast milk.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

Surgical and Mechanical Treatment of Peripheral Nerves. By Byron Stookey, M. D. With a chapter on Nerve Degeneration and Regeneration, by G. Carl Huber, M. D. 475 pp. 217 illustrations, 8 in colors, and 20 charts. Philadelphia and London: W. B. Saunders Co. 1922. Price, $10.00.

The Thyroid Gland. Clinics of George W. Crile, M. D., and Associates at the Cleveland Clinic, Ohio. 228 pp. 106 illustrations. Philadelphia and London: W. B. Saunders Co. 1922. Price, $5.00.

Tuberculosis in Infancy and Childhood. By J. Claxton Gittings, M. D., and Frank C. Knowles, M. D. Philadelphia and London: J. B. Lippincott Co. 1922. 275 pp. Price, $5.00.

The Defective Delinquent and Insane. By Henry A. Cotton. M. D. Princeton University Press. Princeton, New Jersey. 1921. Price, $3.00.

The Psychic Health of Jesus. By Walter H. Bundy, Ph. D. New York: The MacMillan Co. 1922. Price, $3.00.

Opiate Addiction, Its Handling and Treatment. By Edw. Huntington Williams. The MacMillan Co. New York: Price, $1.75.

The Healthy Child From Two to Seven—A Handbook for Parents, Nurses and Workers for Child Welfare. By Francis Hamilton MacCarthy, M. D.

Clinical Examination of the Nervous System. By G. H. Monrad-Krohn, Lecturer in Neurology at the Royal Frederick University, Christiania. New York: Paul B. Hoeher, Publisher. 1922. Price, $2.00.

Ringworm, and Its Successful Treatment. By John P. Turner, M. D. Illustrated by 8 half-tone engravings. Philadelphia: F. A. Davis Co. 1921. Price, $1.00.

The Practical Medicine Series. (Comprising 8 volumes on the year's progress in medicine and surgery.) Vol. I. Series 1921. **General Medicine.** Edited by Frank Billings, M. D., and Burrell O. Raulston, M. D. Chicago: The Year Book Publishers. Price, $2.50.

Motherhood. By H. W. Long, M. D. Boston: Richard G. Badger, The Gorham Press. Price, $3.00.

Nostrums and Quackery By Arthur J. Cramp, M. D., Director of the Propaganda Dept., Journal of the A. M. A. Vol. II. Chicago. 1921.

Transactions of the College of Physicians of Philadelphia. Third series. Vol. 42.

Diseases of Children. By Herman B. Scheffield, M. D. 238 illustrations. 9 colored plates. St. Louis: C. V. Mosby Co. Price, $9.00.

Ephraim McDowell—"Father of Ovariotomy" and Founder of Abdominal Surgery. With an Appendix on Jane Todd Crawford. By August Schachner, M. D., Louisville, Ky. Octavo volume of 350 pp. Illustrated. Philadelphia and London: J. B. Lippincott Co. Price, $5.00.

Suggestion and Auto-Suggestion. By Charles Boudouin, Professor at the Jean-Jacques Rousseau Institute. New York: Dodd, Mead & Co. 1921.

Vice and Health. By John Clarence Funk, M. A., LL. B. 174 pp. Philadelphia and London: J. B. Lippincott Co. 1921. Price, $1.50.

Essentials of Laboratory Diagnosis. Designed for students and practitioners. By Francis Ashley Faught, M. D., formerly Director of the Laboratory of the Department of Clinical Medicine and Assistant to the Professor of Clinical Medicine, Medico-Chirurgical College, etc., Philadelphia, Pa. Eleven full-page plates (four in colors) and seventy-eight text engravings. Seventh Revised and Enlarged Edition. F. A. Davis Company, Publishers, Philadelphia, Pa. 1921. Price, $4.50.

Papers from the Mayo Foundation For Medical Education and Research and the Graduate School of Medicine of the Univ. of Minn., covering the period of 1915-1920. 695 pp., 203 illustrations. Philadelphia and London: W. B. Saunders Co. 1921. Price, $10.00.

A Textbook of Physiology: For Medical Students and Physicians. By Wm. H. Howell, Ph. D., M. D., Prof. Physiology, Johns Hopkins Univ. 8th edition, thoroughly revised. 1053 pp. 308 illustrations. Philadelphia and London: W. B. Saunders Co. 1921. Cloth, $6.50.

A Textbook of General Bacteriology. By Edwin O. Jordan, Ph. D., Prof. Bacteriology, Univ. Chicago, and Rush Medical College. 7th edition, revised. 744 pp., illustrated. Philadelphia and London: W. B. Saunders Co. 1921. Cloth, $5.00 net.

Diseases of the Skin and the Eruptive Fevers. By Jay F. Schamberg, M. D., Prof. Dermatology and Syphilis, Univ. Pa. 4th edition, revised. 626 pp., 265 illustrations. Philadelphia and London: W. B. Saunders Co. 1921. Cloth, $5.00 net.

Clinical Tuberculosis. By Francis Marion Pottenger. Chapter on Laboratory Methods by Jos. E. Pottenger. In two volumes. 1400 pp. 170 illus., 10 color plates and charts. 2nd edition. St. Louis: C. V. Mosby Co. Price, $15.00.

Clinical Electrocardiography. By Frederick A. Willius, M. D. Section on Clinical Electrocardiography, The Mayo Clinic, Rochester, Minn., and the Mayo Foundation. 188 pp. 185 illus. Philadelphia and London: W. B. Saunders Co. 1922. Cloth, $5.00.

The Life of Jacob Henle. By Victor Robinson, M. D. New York: The Medical Life Co., 12 Mt. Morris Park, W. Price, $3.00.

Neoplastic Diseases. A treatise on Tumors. By James Ewing, M. D., Sc. D., Prof. Pathology, Cornell Univ. 2nd edition, revised and enlarged. 1054 pp. 514 illus. Philadelphia and London: W. B. Saunders Co. 1922. Cloth, $12.00.

Infant Feeding. By Clifford G. Grulee, M. D., LL. D., Associate Prof. Pediatrics, Rush Medical College. 4th edition, revised. 397 pp., illustrated. Philadelphia and London: W. B. Saunders Co. 1922. Cloth, $4.50.

Psychoanalysis: Its Theories and Practical Application. By A. A. Brill, Ph. D., M. D. Lecturer on Psychoanalysis and Abnormal Psychology, New York Univ. 3d edition, revised. 468 pp. Philadelphia and London: W. B. Saunders Co. 1922. Cloth, $5.00.

American Illustrated Medical Dictionary (Dorland). 11th edition, revised and enlarged. Edited by W. A. Newman Dorland, M. D. 1229 pp., 338 illus., 141 in colors.

Containing over 1500 new terms. Philadelphia and London: W. B. Saunders Co. 1921. Flexible leather, $7.00 net; thumb index, $8.00 net.

The Mechanics of the Digestive Tract. By Walter C. Alvarez, M. D. 192 pp., 22 illus. New York: Paul B. Hoeber. Price, $3.50.

An Essay on the Physiology of Mind. By Francis X. Dercum, M. D., Ph. D., Prof. Nervous and Mental Diseases, Jefferson Medical College, Philadelphia. 150 pp. Philadelphia and London: W. B. Saunders Co. 1922. Cloth, $1.75.

Abdominal Pain. By Prof. Dr. Norbert Ortner, Chief of Medical Clinic, Univ. Pa. New York: The Rebman Co. 1922.

The Practical Medicine Series. Vol. V. **Gynecology,** edited by John C. Dudley. **Obstetrics,** edited by Jos. E. DeLee. Series 1921. Chicago: The Year Book Publishers. Price, $1.75. Price of series of eight volumes, $12.00.

South America—From a Surgeon's Point of View. By Franklin H. Martin, C. M. G., M. D., F. A. C. S., Director-General of American College of Surgeons. Introduction by Wm. J. Mayo. Chicago: Fleming H. Revel Co. 1922.

BOOK REVIEWS

Diseases of the Skin and the Eruptive Fevers. By Jay Frank Schamberg, M. D., Professor of Dermatology and Syphilis, Graduate School of Medicine, University of Pennsylvania. Fourth Edition Thoroughly Revised. Octavo of 626 pages, 265 illustrations. W. B. Saunders Company, Philadelphia and London. 1921. Cloth, $5.00 net.

Dr. Shamberg follows the old Viennese school in his conception of the study of dermatology, considering it in its broadest sense as embracing all morbid processes that are characterized by cutaneous manifestations. He also lays special stress on the necessity of a skin specialist being secured in the diagnosis of the rashes of the various eruptive fevers as they so frequently simulate the ordinary dermatoses. The exanthemata in this volume are treated in a special section and are given much greater space than is usually accorded to them in books on skin diseases.

In his fourth edition, Dr. Schamberg has included brief new chapters on a number of the more rare dermatoses. The treatment of syphilis has been entirely rewritten and the work is highly recommended.

Clinical Tuberculosis. By Francis Marion Pottenger, Monrovia, Cal. With a chapter on Laboratory Methods by Jos. E. Pottenger. Two volumes. 1400 pp. 170 illustrations, 10 color plates and charts. Second edition. C. V. Mosby Co., St. Louis. 1922. Price, $15.00.

Dr. Pottenger's most complete and extensive work on clinical tuberculosis was hailed as a milestone in the history of medical literature on the subject. He explains that a work so encyclopedic in scope was written because of no work being accessible to English reading clinicians which attempted more than a hurried discussion of the subject, and the searcher for the reason of things was usually disappointed in not being able to find it. He was correct in assuming that a fuller discussion of tuberculosis than that usually given us was necessary and desirable in English, and that a consideration of a tuberculous patient and his treatment from a physiologic standpoint was badly needed.

Volume I is given over to pathology, anatomy, pathological physiology, diagnosis and prognosis; Volume II to complications and treatment. The second edition has brought the earlier work up to date. In the chapters on diagnosis, the brillant author has incorporated his latest observations on pulmonary reflexes and showu the channel through which pulmonary tuberculosis expresses itself in disturbing functions in the production of subjective and objective symptoms. The chapters on the nervous system are wonderfully interesting in that they treat with the basic principles for understanding the manner in which the patient reacts toward tuberculosis in the production of symptoms. Nothing is more important to the practitioner than an understanding of the patient's reaction toward the disease and nothing approaches Dr. Pottenger's treatment of this important phase.

A new chapter on influenza in tuberculosis will be appreciated by those who have been experiencing difficulty in diagnosis during the recent pandemic. The work is splendidly printed and richly illustrated by halftones, original drawings and numerous charts. A large part of the second volume is given over to clinical case presentation with elaborate charts and records. One can not speak too highly of this splendid work and those who did not purchase the first edition will find this a most valuable addition to the reference library.

Clinical Electrocardiography. By Frederick A. Willius, M. D. Section on Clinical Electrocardiography, the Mayo Clinic, Rochester, Minnesota, and the Mayo Foundation, University of Minnesota. Octavo of 188 pages with 185 illustrations. W. B. Saunders Company, Philadelphia and London. 1922. Cloth, $5.00 net.

The constantly increasing use of the electrocardiograph has prompted Dr. Willius of the Mayo Clinic to give us a most valuable little work of 188 pages on the subject. While electrocardiography must always remain subsidiary to practical methods of physical diagnosis, its value as a most important clinical adjunct has been firmly established and it is to be regretted that it is not available or hardly practical for the busy general practitioner. This work, however, will be of intense interest to those whose laboratories are equipped for the work and they will find the volume reviewed presents the subject in a logical manner. The work is simply presented and makes plain what is usually most difficult reading.

Neoplastic Diseases. A treatise on Tumors. By James Ewing, M. D., Sc. D., Professor of Pathology at Cornell University Medical College, New York City, Second Edition, Revised and Enlarged. Octavo of 1054 pages with 514 illustrations. W. B. Saunders Company, Philadelphia and London. 1922. Cloth, $12.00 net.

The object of Dr. Ewing's notable work on neoplasms is stated in the preface of his first volume to be that of

presenting in accessible form the main factors of the origin, structure and natural history of tumors. He has splendidly fulfilled his desire to analyze the numerous etiologic factors which meet in such divers fashion in the inception of tumors, to emphasize the general dependence of the clinical course upon the histologic structure, to trace histogenesis to the last degree, impressing its essential importance when known, and to enumerate and then contrast the more striking clinical features which are often characteristic of different tumors.

In his second edition, an extensive revision and enlargement of certain chapters has been made and many new references and data collected during the past two years has been added. The chapters on tumors of bone and on neurofibromatosis have been extensively recast. Thirty-three new photographic illustrations have been added, making a total of 514. The work is a classic on the subject and is deserving of much more attention than can be given in this limited department.

Infant Feeding. By Clifford G. Grulee, M. D. LL.D., Associate Professor and Acting Head Department of Pediatrics at Rush Medical College. Fourth Edition, Thoroughly Revised. Octavo of 397 pages, illustrated. W. B. Saunders Company, Philadelphia and London. 1922. Cloth, $4.50 net.

Dr. Grulee has tried to bring to us in print the knowledge of the scientific processes which underlie infant feeding and to put forth the practical application of these processes in such a way that they can be grasped by one no more familiar with the subject than the practicing physician. The book is based on a course of lectures given at Rush Medical College. In bringing out the fourth edition, the author has in every way brought the work up to date and much valuable work has been accomplished in the past few years in the matter of infant feeding.

The work is divided into five general parts, namely, fundamental processes of infants' nutrition; nourishment of the infant on the breast; artificial feeding; nutrition in other conditions, and psychology. It is a splendid work for the pediatrician and the general practitioner.

Psychoanalysis: Its Theories and Practical Application. By A. A. Brill, Ph.D., M.D. Lecturer on Psychoanalysis and Abnormal Psychology, New York University. Third Edition, thoroughly revised. Octavo of 468 pages. W. B. Saunders Company, Philadelphia and London. 1922. Cloth, $5.00 net.

Dr. Brill from the beginning has stood out as one of the most prominent Freudians in America and his first edition of the present work attracted nationwide attention to a new and much discussed branch of medicine. Since its appearance, psychoanalysis has made unprecedented progress and has been recognized as an important therapeutic agent in the treatment of nervous and mental patients as well as an interpreter of subjects and phenomena not so strictly medical. Much has been published on the subject, some of it good and some of it exceedingly bad, for lay people without the proper training or knowledge have taken it up as a fad and in their incompetency have done much to discredit it.

Dr. Brill's third edition incorporates the newer advances in psychoanalysis and presents a safe and sane treatise on the subject which can be recommended to the medical profession.

American Illustrated Medical Dictionary (Dorland). A new and complete Dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology, and kindred branches; with new and elaborate tables. Eleventh Edition, Revised and Enlarged. Edited by W. A. Newman Dorland, M. D. Large octavo of 1229 pages with 338 illustrations, 141 in colors. Containing over 1500 new terms. W. B. Saunders Company, Philadelphia and London. 1921. Flexible leather, $7.00 net; thumb index, $8.00 net.

During the two years which have elapsed since the publication of the tenth edition of the American Illustrated Medical Dictionary, there has been no let-up in the coinage of new terms. This has unquestionably been the most popular medical dictionary on the market and the eleventh edition just published thoroughly meets the requirements for the old as well as the new terminology of medicine. Additions have been most numerous in the fields of biology, endocrinology and neurology, yet every branch of medicine has received its share of new terms. It is a work which should be within reach and on the desk of every physician.

An Essay on the Physiology of Mind. By Francis X. Dercum, M. D., Ph. D., Professor of Nervous and Mental Diseases in the Jefferson Medical College, Philadelphia. 12mo of 150 pages. W. B. Saunders Company, Philadelphia and London. 1922. Cloth, $1.75 net.

Anything new from the pen of Dr. Dercum on the "Physiology of Mind" will be immediately ordered by those familiar with psychiatric literature. The distinguished author has endeavored in this little volume to present the basic facts of those reactions of the organization to the environment which, under given conditions, manifest the quality which we speak of as "mind." It is an essay which will live long as a classic and will attract international attention.

Abdominal Pain. By Prof. Dr. Norbert Ortner, Chief of Medical Clinic, University of Pa. The Rebman Co., New York. 1922.

The translation of this volume on abdominal pain was undertaken with the desire to present the teachings of the school of Bamberger, Neusser and Ortner in what is perhaps the best and most adequate form. The translation is of the latest edition of Dr. Ortner's work and in the preface the author expresses the hope that it may be helpful in re-establishing free relations between members of the medical profession of the English speaking countries and of his own. The book will have an immediate appeal to those familiar with the Viennese institutions, to whom Professor Ortner needs no introduction. To others, it can be recommended.

The Mechanics of the Digestive Tract. By Walter C. Alvarez, M. D. 192 pp. 22 illustrations. Paul B. Hoeber, New York. Price, $3.50.

The work under review is a splendid contribution to the mechanical features of digestion and gives in detail all the present knowledge of the processes of digestion, sufficiently technical for the research worker in physiology, and readable and practical enough for the practicing physician. The theory of peristalsis and the gradient theory of the digestive forces so much discussed today and yet so little understood are here explained and clarified in a manner which has been needed for a long time.

This little volume is most highly recommended to clinicians, Roentgenologists, physiologists, gastro-enterologists and surgeons who will find it an unusual presentation of a most important subject which can not be duplicated. A twenty-three page bibliography gives a key to everything worth while in medical literature on the mechanics of the digestive tract.

The Practical Medicine Series. Vol. V. *Gynecology*, edited by John C. Dudley. *Obstetrics*, edited by Jos. E. DeLee. Series 1921. The Year Book Publishers, Chicago. Price of this volume, $1.75; price of series of eight volumes, $12.00.

Drs. Dudley and DeLee have again succeeded in getting together and presenting in concise and readable form the important literature published during the year in these two specialties and the present volume measures up in every respect to previous editions.

South America—*From a Surgeon's Point of View.* By Franklin H. Martin, C. M . G., M. D., F. A. C. S., Director-General of the American College of Surgeons. Introduction by Wm. J. Mayo. Fleming H. Revel Co., Chicago. 1922.

We are indeed indebted to Dr. Martin for a publication of the notes which cover two visits made to the Southern Continent in behalf of the American College of Surgeons, the first in company with Dr. Wm. J. Mayo, and the second with Dr. Thomas J. Watkins.

The work is essentially a medical travelogue, profusely illustrated with pictures of the countries through which Dr. Martin passed and the leading medical men with whom he came in contact. It has afforded us a number of most pleasant evenings and the delightful style of the author has seemed to carry us with him through his most interesting medical travels.

Surgical and Mechanical Treatment of Peripheral Nerves. By Byron Stookey, M. D., Associate in Neurology, Columbia University; Assistant Professor of Neurosurgery, New York Post-Graduate Medical School and Hospital. With a chapter on Nerve Degeneration and Regeneration by G. Carl Huber, M. D., Professor of Anatomy, University of Michigan. Octavo volume of 475 pages with 217 illustrations, 8 in colors and 20 charts. W. B. Saunders Company, Philadelphia and London. 1922. Cloth $10.00 net.

Every year certain new works stand out as unusual contributions to medical science. Dr. Stookey's new work is of this character. The aim of this book has been to give the principles and methods whose foundations are laid in embryology, anatomy and physiology as well as in experimental work and in clinical practice, and to advocate the use only of such procedures as have been shown by such criteria to be of value, for it is not sufficient in nerve surgery at least, to be familiar with gross anatomy alone for the microscopic anatomy must also be shown.

This is a splendid work, completely covering the subject, beautifully illustrated, clearly written and, in the final analysis, will be found securely entrenched as one of the most successful works issued during the year.

The Thyroid Gland. Clinics of George W. Crile, M. D., and Associates at the Cleveland Clinic, Ohio. Octavo of 228 pages, with 106 illustrations. W. B. Saunders Company, Philadelphia and London. 1922. Cloth, $5.00 net.

This is another 1922 publication which stands out as unusual and which will at once appeal to the specialist and general practitioner alike. Dr. Crile and his associates have furnished a work which completely covers a most important medical subject, especially in this section of the United States. It would be impossible to attempt to describe the work in a review of this length. Everything bearing on the role of the thyroid is covered by an authority and no library this year will be complete without it.

Tuberculosis in Infancy and Childhood. By J. Claxton Gittings, M. D., and Frank C. Knowles, M. D. J. B. Lippincott Co., Philadelphia and London. 1922. 275 pp. Price, $5.00.

This book consists of a series of lectures delivered at the Children's Hospital, Philadelphia, under the auspices of the Philadelphia Pediatric Society. It is published with the realization that in a general textbook on pediatrics it is impossible to devote any more than a limited amount of space to any one type of disease, emphasizing the fact that tuberculosis must be taken into consideration in the diagnosis of the vast majority of the sub-acute diseases of childhood. A work of this kind is especially important to every physician coming in contact with children. It is well worth while.

The Defective Delinquent and Insane. By Henry A. Cotton, M. D., Princeton University Press, Princeton, New Jersey. 1921. Price, $3.00.

This is a collection of lectures delivered at Princeton University in January, 1921, on the relation of focal infections to the causation, treatment and prevention of the delinquent and insane. Dr. Cotton has been an enthusiast in this field and those who have followed his work will welcome the collection and publication of his Princeton lectures.

The work is divided into seven chapters, the fifth a series of twenty-five case reports. The profession has realized more and more every year the role of focal in-

The Endocrines, Digestive Ferments, Catgut Ligatures, etc.

THE ARMOUR LABORATORY is maintained for the purpose of handling the glands, membranes and other raw materials supplied by our abattoirs in immense quantities, from which important therapeutic agents are extracted and fabricated.

Among the products that the physicians and surgeons use daily are:

Corpus Luteum; Suprarenals, U. S. P.; Parathyroids; Pituitary, Whole Gland; Pituitary, Anterior; Pituitary, Posterior; and other glandular substances in po. and tabs. Pituitary Liquid in 1 c. c. and 1-2 c. c. ampoules.

Armour's LABORATORY PRODUCTS

Suprarenalin Solution 1:1000; Suprarenalin Ointment 1:1000; Pepsin, U. S. P.; Pancreatin, U. S. P.; and other preparations of the Digestive Ferments that are used in stomachic and intestinal disorders and as vehicles for nauseating drugs.

We also make Sterile Surgical Catgut Ligatures plain and chromic, boilable; and Iodized Ligatures, nonboilable. ¶ The Armour ligatures are made from Lambs' gut, selected especially for surgical purposes and sterilized at opportune stages in such manner as to preclude the possibility of contamination in the finished strings.

We are headquarters for the Organotherapeutic Agents and are always glad to co-operate with the medical profession

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An Interesting "Case History"

Number 1

Case No. 3844. Doctor A. B., physician, 34 years old. First presented himself February 24, 1921.

Past History: Built good practice, but was rather careless in his manner of building an income fund. Bought questionable stocks on two occasions. Results negative.

Complaint was: Rather variable income, common to men in his profession. Collections good, but sometimes slow. Expenses regular.

Treatment: Placed on our Income Fund Plan, payments ad. lib.

Last report shows balance of $5,000 in bonds of sound public utility corporations, paying 7% on actual sums paid. Progress more rapid than expected.

Prognosis: Excellent.

MORRIS F. FOX & CO.
INVESTMENT SECURITIES
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MADISON MONTICELLO GREEN BAY

fections in the production of mental disorders and Dr. Cotton has probably given this closer study than any other.

The Psychic Health of Jesus. By Walter H. Bundy, Ph. D. The MacMillan Co., New York. 1922. Price, $3.00.

Those tremendous statements of Jesus in the first person, and the singular deeds recorded of Him in the New Testament, have led different men in the last two decades to picture Him as a psychopathic personality.

"The Psychic Health of Jesus" aims (a) at a comprehensive survey of the pathographic judgment thus pronounced against Jesus in both its earier and its more developed stages, and (b) a determination on the weight of the evidence, secured from a systematic sifting of the New Testament sources, of the truth or falsity of those views of the personality of Jesus.

The reader who overcomes his first impulse to ignore them altogether will find that the confutation of those who have subjected Jesus' nature to such indignity involves the employment of a great amount of material of keen interest to every student of the life of Jesus, much of which is here presented for the first time to the English reader.

Opiate Addiction, *Its Handling and Treatment.* By Edward Huntington Williams. The MacMillan Co., New York. Price, $1.75.

This work covers the nature of opiate addicts, gradual reduction treatment, useful hypnotics, rapid withdrawal methods, characteristics of hyosein delirium and a final chapter on comments and observations. It offers some new ideas on the subject and a working basis in some respects for a more sensible handling of cases.

The Healthy Child From Two to Seven—A Handbook for Parents, Nurses and Workers for Child Welfare. By Francis Hamilton MacCarthy, M. D.

This little work seems to fill rather a distinct need for a book to place in the hands of parents of children from two to seven years of age, a most vital period of childhood. It includes nutrition, physical care, the child nature and mental training. Of special value are the chapters devoted to the discussion of nervous strain during the pre-school years. It is a sensible little work for parents and is highly recommended.

The Medical Clinics of North America. (Issued serially, one number every other month.) Volume V, Number IV, January, 1922. By New York Internists. Octavo of 214 pages, with 38 illustrations. Per clinic year (July, 1921, to May, 1922). Paper, $12.00 net; cloth, $16.00 net. W. B. Saunders Company, Philadelphia and London.

The Surgical Clinics of North America. (Issued serially, one number every other month.) Volume II, Number I (The Philadelphia Number), 331 pages, with 145 illustrations. Per clinic year (February, 1922, to December, 1922). Paper, $12.00; cloth, $16.00 net. W. B. Saunders Company, Philadelphia and London.

MEDICAL WORK IN THE NEAR EAST.

Need for medical work in Armenia and the famine stricken area of Asia Minor is so vast as almost to defy any attempt to meet it, according to Charles V. Vickrey, Secretary of the Near East Relief, in his annual report to Congress.

Near East Relief now maintains 38 hospitals besides clinics, and conducts or supervises special dispensary and sanitary work in caring for the health of the refugees and migrant people of these famine and politically disturbed areas. 88,401 patients were recorded in the last completed monthly report. The importance of medical work especially among children, is suggested by the fact that in the Alexandropol orphanages there are more than 3,000 children suffering from Trachoma. These have been segregated in one of the army barracks for special treatment.

The one great standard remedy that could cure most of the diseases, states Mr. Vichery's report, is food, for in the last analysis most of the deaths are from malnutrition. But aside from food there is need for quinine, smallpox serum and standard remedies of all descriptions, to be prescribed by physicians able to organize and administer the work.

Mr. Vichrey recommends the purchase of standard remedies that can be used with a large degree of effectiveness by native doctors under the general direction of experienced American doctors who are stationed at the important centers.

At the present time the Near East Relief is attempting practically no medical work in the Caucasus outside of that immediately related to the orphanages. In these institutions the medical work is tremendous. Doctors have to cope with thousands of cases of scabies, trachoma and the ever present children's complaints and danger from epidemics of various kinds.

The conflict between the Turkish Nationalists and the Russian Red Army brought about one of the most trying situations which the medical staff of the Near East Relief had to meet during the year. Six thousand children had to be transported in the dead of winter from Kars to Alexandropol in unheated railroad trains, spending two or three days and nights enroute across snow covered plains with no warm food. On arriving at Alexandropol there was likewise no fuel available except for children in the hospital. For days at a time every one was obliged to eat cold food because of fuel shortage.

WELL PACKED.

A lady and her little daughter were walking through a fashionable street when they came to a portion strewn with straw, so as to deaden the noise of vehicles passing a certain house.

"What's that for, mamma?" said the child.

The mother replied: "Why, the lady in that house, has had a little baby girl sent her."

The child thought a moment, looking at the quantity of straw and said: "Awfully well packed, wasn't she, mamma?"

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ORIGINAL ARTICLES.

SYMPOSIUM ON CANCER

Arranged by

BENJ. H. SCHLOMOVITZ, M. D.

MILWAUKEE.

The abstracts which follow were arranged at the suggestion of the committee on cancer of the State Medical Society as part of its campaign to bring about earlier diagnosis of cancer. This symposium on cancer was given before the Medical Society of Milwaukee County, March 10, 1922.

The officers of the society invited the members of the dental, nursing and social service professions to attend the meeting. It is hoped that county medical societies throughout the state will arrange similar programs.

The committee on cancer is prepared to furnish slides for use in presenting the symptoms of cancer in different parts of the body. These slides can be secured by communicating with the chairman or secretary of the committee. The committee has also assembled four sets of slides of fifty each for use in the presentation of the earlier suggestive symptoms of cancer before lay audiences. Members of the profession throughout the state are respectfully urged to solicit opportunities to present the subject to the laity and to continue presenting it until cancer shall have been discussed before the citizens of every city, village and hamlet in the state. For further information address Walter K. Gray, M. D., Sec'y Committee on Cancer, Wells Bldg., Milwaukee, Wis.

Statistical Data by Joseph P. McMahon Chairman of the Committee on Cancer of the State Medical Society, who opened the symposium with introductory remarks on the questions of the prevalence and present status of the treatment of cancer. Dr. McMahon inquired:

Why a National Association for the study and control of cancer?

Why a National Cancer Week?

Why a State Medical Society Committee for the Study and Control of Cancer?

Why a Symposium on Cancer? and

Why have we in the past achieved such unsatisfactory results in the treatment of cancer?

The briefest and most forceful reply which could be made to these questions is embodied in the following statistical survey.

Estimated total mortality cancer and other frequent causes of death in U. S., 1920.

Cancer — total	100,000
Distribution—	
Females	67,000
(Owing to frequency of cancer of female generative canal and breast, cancer causes twice as many deaths of women as men)	
Males	33,000
Whites	95,426
Colored	4,574

Other Frequent causes of Death in U. S. 1920.

Diseases of the Heart	111,579
Tuberculosis	106,985
Pneumonia	105,213
Diseases of the Kidneys	75,005

Organs and parts primarily affected with cancer.

Stomach and Liver	35,000
Female Generative Organs (frequency rivals cancer of stomach and liver in women)	20,000
Female Breast (One-half in unmarried women)	15,000
Intestines and Peritoneum	12,000
Buccal Cavity	4,000
Skin	4,000
Other Organs and Parts	20,000

One person in 10 above 40 dies from cancer—one woman in 8 or 12½% ; and one man in 14 or 7 2/7%.

The following tabulation shows the death rate in the "State of Wisconsin" and "City of Milwaukee" according to the State Board of Health report for 1920:

Cancer—Wisconsin 1920	2,234
Cancer—Milwaukee 1920	382

Other Frequent Causes Death—Wisconsin and Milwaukee, 1920.

	Wis.	Mil.
Diseases of the Heart	3,100	611
Pneumonia	2,500	930
Tuberculosis	2,217	390
Diseases of the Kidneys	1,665	277

Organs and Parts primarily affected with Cancer

Stomach and Liver	1,077	181
Intestines and Peritoneum	273	59
Female Generative Organs	262	43
Female Breast	112	22
Skin	60	5
Buccal Cavity	47	12
Other Organs and Parts	373	60

The number of deaths per week (Wis.) from cancer of different organs and parts: Stomach

and Liver—21; Intestines and Peritoneum—5; Female Generative Organs—5; Female Breast—3; Mouth—1; Other Organs and Parts—7; Total—42.

"Statistics on recent study of 500 cases of cancer" —Reported from one of the best hospitals in the U. S.

Average age onset 50.

Cancer other members family 11% of cases.

Ulceration as first symptom 36%.

Pain first symptom 25%.

Symptoms referable to special organs 18%.

Average delay in consulting physician after appearance of first symptom—3 months.

Average delay in submitting to treatment after it was advised—3 weeks.

Radical operation indicated in only 45%.

Absolutely inoperable 28%.

Palliative operations such as gastro-enterostomy, cauterization and tracheotomy indicated in 27%.

Five year prolongation of life following radical operation 25%.

Immediate mortality following radical operation 15% (principally in lesions of the intestinal and genito-urinary tracts and is usually due to sepsis).

Site of lesion efficient treatment of which prolonged life 5 years:

Buccal Cavity	10%
Cervix Uteri	8%
Rectum	5%
Stomach	1%

From above data it appears that only 10% of all cases examined were afforded a five year prolongation of life.

With reference to the question—"What are we going to do with the problems brought forth and emphasized by the three tables just presented"—it may be stated that there are four principal means of staying the ravages of cancer, namely:

1. Not only earlier diagnosis but diagnosis while the lesions are still precancerous or at least remain localized.

2. Complete and permanent removal of exciting causes, particularly chronic irritation.

3. More efficient treatment of local lesions, and

4. Building up the patient's resistance as we have been doing in the management of marasmatic infants, rickets, the tuberculous, etc.

Further, that the accomplishment of these objectives will require the establishment of independent cancer hospitals, sanitaria, or clinics; or, still better, well-manned cancer departments as subdivisions of existing general hospitals, sanitaria, and clinics, and the assembling of the combined educational facilities and therapeutic resources of the medical and sociological professions as well as volunteer and governmental agencies.

Doctor Winter inaugurated such a plan in East Prussia with the result that the proportion of cancer patients who consulted a physician within three months after the first symptoms increased from 32 to 57%. The proportion of patients operated upon the first two weeks after diagnosis increased from 78 to 90%. The operability was increased from 62 to 74%. A similar plan has been recently introduced in a couple of our own larger cities.

The establishment and maintenance of cancer clinics in the centers of populations in Wisconsin may at first appear to be an ambitious program, but it can and undoubtedly will eventually be accomplished. The time has arrived to institute the undertaking, and the members of the Medical Profession both by virtue of tradition and training are the logical initiators of such a movement. If they do not take advantage of the opportunity and live up to their obligations to render additional humanitarian and public service, the problems will be taken up by voluntary lay organizations and public agencies and solved without the assistance of the majority (and despite the possible opposition of a few) of the rank and file of our Guild.

THE SOCIOLOGIC ASPECTS OF CANCER AND THE OBLIGATION OF THE MEDICAL PROFESSION TO PERFECT ITSELF IN EARLY DIAGNOSIS.

By P. H. McGovern.

Cancer is at first a local noncontagious disease in the body and spreads in its later development. It is a great destroyer of men and women in middle life, and its incidence has been steadily on the increase for many years. Over 90,000 adults die every year in America from cancer. The economic loss to society is heavier than perhaps that caused by any other disease, because those who die from cancer are stricken down in the richest and sanest productive period of life. Society in America as organized today in every department of business and in the professions, places requirements so

high that men and women approach thirty years of age before they are prepared to be of real service to the world. In ten short years of such service and experience during which time they are finding themselves in their chosen calling and have just reached safe anchorage, they are then much to their surprise on the threshold of the so-called cancer period, which extends from 40 to 75. While tuberculosis reaps its greatest harvest in earlier life before men and women have completed preparation for their careers, cancer reaps its greatest harvest from 50 to 60 when men are of the greatest service to the family, the state, and the nation. The cancer problem, viewed from the economic standpoint reveals an immense loss every year to society. Let me cite the case of just one man—Dr. Harper of the University of Chicago. Prof. Harper was perhaps the greatest scholar in Sanskrit that America has ever produced. He was perhaps the greatest administrator of a great University that America has yet had. The organization of Chicago University is largely the work of Dr. Harper. He died in the first half of the cancer age, when he was best equipped to render unusual service to his University and to the educational forces of America. This example could be multiplied thousands of times, for cancer is a respector of neither class nor creed but kills wherever it finds the soil prepared.

Mortality from this disease seems still to be on the increase. The annual increase in the cancer death rate is about 2½%. Recent statistics rather indicate that we have reached the turning point of the mortality curve, and it remains for the physicians, dentists and nurses to do their full duty in educating the public on the prevention and curability of this dread disease to the end that increase may cease and a steady decline be ushered in. We must first educate the people to the fact that after the age of thirty-five they must pay strict attention to any unusual change in structure or function, of any part of the body, and present themselves at a physician's office for diagnosis. The first thing that must be driven home to the whole people is the absolute necessity of a careful painstaking study of any new bodily phenomena, that an immediate diagnosis must be made and rational treatment instituted. The second thought which should be appreciated by all and brought clearly before the people is that cancer in its earlier stages is a curable disease. If we can educate the public to the fact that cancers while still sharply localized in a portion of the body can be cured or eliminated in the great majority of cases, then we will have removed a great fear from the mind of the public and placed before the people a fundamental truth without which little progress in the treatment of cancer can be made. So long as the public believes that cancer is a fatal disease and that medicine and surgery have up to this time furnished no adequate means of checking its ravages, the medical profession will receive little cooperation from the laity. Heretofore the public and physicians alike have lost valuable time observing the beginnings of cancer when diagnosis was difficult but cure was easy, until the time arrived when diagnosis was easy but cure was quite impossible. It is too bad that the early stages of cancer are not painful, yes horribly distressing. If cancer caused in its early growth the torture that must be endured in the later months, surgical results would show more favorable statistics.

A recent review of 519 cases which had been treated at the Massachusetts General Hospital developed the astounding fact that an average of 5 4/10 months had elapsed from the time the patient first noticed the disease until he consulted a physician. An average of another three months passed from the first visit to a physician until that physician advised radical procedure. Therefore, 8½ months of valuable time had been lost and a staggering mortality was the end result. The most skilled operators have become disheartened when time after time they are called to treat an inoperable and incurable cancer. Surgery has been baffled but will come into its own when used at the proper time, namely while cancer is still a small localized growth or better still when removing precancerous lesions under local anesthesia. Surgery so used will cause the mortality to drop to less than one-half of what it is today and people will turn to the surgeon assured that he can save them from the horrible suffering and sure death due to this disease when not treated radically at the earliest possible moment. To delay until diagnosis is positive is to invite disappointment and failure. We must teach the public that they can not expect more than a strong *suspicion* of malignancy before vigorous treatment is applied. Surely a heavy responsibility rests on our profession in the organized fight to control these malignant growths.

The development and progress of cancer naturally divides itself into four periods: First, the operation of the causal factor or factors; second, the appearance and development of precancer lesions; third, the development of a localized growth; fourth, the state of metastasis in which cancer has ceased to be a localized disease, and has started on its road to general involvement of the body. We do not know today the etiology of cancer. Why an epithelial cell should lose most of its physiological functions and add to its reproductive function in an enormously increased degree, has not been accounted for by the pathologist. However, we do know that chronic irritation usually accompanies the appearance of precancerous and cancerous growths. The causes of the chronic irritation may be mechanical, chemical, electrical, or in fact any form of radiant energy. If patient and doctor would cooperate in removing these causes of chronic irritation cancer would be a much rarer disease than it is today. Treatment at this stage in the developmental history of cancer calls for the closest cooperation between the patient and the family physician.

Treatment of precancerous lesions is the field in which careful painstaking diagnosis and surgery is to reach the richest service rewards. When called to deal with lesions of the oral cavity such as fissures, ulcers that prove refractory to ordinary treatment, leucoplacia or sources of irritation such as jagged teeth, offending teeth stumps, ill fitting dental plates, bridges and crowns, all should receive careful consideration. If the source of irritation is found, radical correction should be made.

A woman presenting herself before or during the cancer age with a history of irregular flow, bleeding at unusual times, or with a flow of an unusual character, should receive the most careful examination. No excuse should be accepted why an examination should not be made. Lesions anywhere in the body such as keratosis, moles, fissures, ulcers, indurations and benign tumors should be removed under local anaesthesia. In this second stage, proper management of precancerous lesions will furnish most brilliant results as a prophylactic.

During the third or localized cancer stage, surgery when early employed will result in many cures. Here we have two other agencies that may be called into service—radium and X-ray. In the case of the female breast, any small nodule causing a retraction of the nipple or skin, without pain or tenderness, should be dealt with radically when it first comes under observation. For such a lesion is no longer local.

A beginning cancer ceases to be local as soon as the lymphatic vessels draining the tumor area contain cancer cells or when the cancer cells have passed on to the lymphatic glands in that area. A metastasis has already taken place, and the condition calls for the most radical removal of the growth which means the entire mammary gland, the lymphatic vessels of the breast, axilla and about the clavicle, and of course, all the lymphatic glands in and about the axilla and lower portion of the neck. It is unnecessary to speak of the management of cancer that has already spread beyond the point of local formation, because every text book on surgery sets forth the classical operation to be followed in dealing with the removal of cancers in this stage. The medical profession would do well to establish clinics in all medical centers where precancerous lesions, and local growths might be studied for diagnostic purposes. In that way our ability to diagnose early manifestations of cancer and to apply such remedies as seem best would be largely increased. Prophylaxis will accomplish more than all curative means.

And lastly the work of Dr. Maude Slye has demonstrated that heridity plays an important role in the incidence of cancer. Might not this biological fact be used by society in the attempt to rid ourselves of this dread disease.

SOME CANCER QUESTIONS.

By C. H. Bunting.

Professor of Pathology at the University of Wisconsin Medical School.

Cancer does not spring from normal tissue, but always develops from abnormal tissues. Protoplasmic injury is a prime factor in producing cell proliferation. It has been observed that arsenic may cause a typical proliferation of cells, (multipolar mitoses) and as shown clinically even cancer, eventually. Injurious agents may start a lawless growth of cells in a previously normal tissue. Why is it that in some people this proliferative phenomenon remains as a benign and localized growth, and in other people such growth advances until it robs the individual of life? It may be that heredity plays a part and

even directly as in certain congenital malignant growths of the kidney. On the other hand, we do not know the exact factors which determine a malignant condition in one case and a benign condition in another. It is a biological problem, in which there is a battle between a wild race of immortal cells against living cells resisting invasion. The most powerful forces against invasion apparently are lymphoid cells. It is practically impossible to remove all of the cancer cells in removing a carcinoma. Examples—a. Scirrhus cancer of the breast—patient had been operated on 20 years before for scirrhus carcinoma of the breast. Postmortem revealed that the carcinoma had invaded the femur. b. Gastric carcinoma — an emaciated patient manifested a sclerotic walling off of a carcinoma in the stomach. Cancer cells were found in great numbers along the duodenal and gall bladder and also in pleural and in pelvic lymphatics, yet there were no metastases. Resistance of the patient had held the carcinoma in check. c. Patient died of pneumonia — quiescent carcinomatous cells were found in the prevertebral lymph glands eight years after removal of carcinoma of the ovary. d. Carcinoma of the breast—operation was performed very shortly after a lump appeared, but the patient died in a short time with generalized metastases.

These cases illustrate the point that if resistance is lacking then the patient dies from the cancer effects in a short time. On the other hand, if resistance be maintained cancer cells may be present in tissues for years without harmful effect. The maintenance of general health is the only guess we can make as to the method for maintaining this resistance to cancer. Surgeons have not done their full duty when they have merely removed all cancerous growths. They should follow up their patients, and build up their resistance. The great majority of physicians have not been demanding that their patients submit themselves to a long after-treatment.

Cancer is essentially a biological problem which has two sides—the *patient* and the *cancer cells.*

DIAGNOSIS OF CANCER OF THE BUCCAL CAVITY.

By G. V. I. Brown

A rose by any other name may or may not be just as sweet but a cancer is without doubt just as deadly whatever its name may be at this moment of juggling nomenclatures. One may or may not accept the term osteogenic as put forward by Dr. Bloodgood and others who wish to discard the old fashioned terms spindle cell sarcoma, round cell sarcoma and still other varieties of descriptive designations of these growths with the prefixes fibro, osteo, chondro, etc., as formerly understood. Ashurst urges the use of these terms under reasonable limitations as significant and at least important in emphasizing the need of the recognition of *indeterminate* growths because of the frequently progressive tendency to increased malignancy whereby growths of apparently benign character in the early stages may become in the highest degree malignant. One may also prefer to accept the findings of Nuzum with regard to the influence of micro-organisms as etiologic factors. There is at least one thing upon which all agree, both pathologists and surgeons unite in urging the vital importance of the early diagnosis of cancer. This necessarily implies the differentiation between simple affections of benign character and those that might properly be classed as malignant.

Inasmuch as the mouth and jaws are so frequently affected by lesions that have a suspicious appearance and these of such widely varying character, it would seem to be quite inappropriate to undertake to discuss the diagnosis of malignant growths in this region without at least a cursory review of some of the non-cancerous affections that may be likely to confuse their diagnosis. With this in view we present some illustrations of common lesions of the mouth prepared and selected with particular reference to a similarity in appearance that is sometimes found in quite different oral diseased conditions and also benign growths that are not infrequently confused with neoplasms. The result of such a confusion is manifested by the many cases for which deforming, destructive, extensive resections have been performed with disastrous effect when such treatment was wholly unnecessary, while on the other hand there are innumerable, almost daily, examples of delay through repeated inefficient methods of treatment applied in the belief that the condition was not of serious character and the real nature of the affection not discovered until too late to save the patient.

It would be impossible in the brief time at our disposal in the course of this symposium to attempt to cover in any sort of intelligent manner a de-

tailed consideration of the differential diagnosis that is required for distinguishing between the different non-cancerous affections of the mouth and associated parts and those evidences of disease that may properly be considered as pathogenic of neoplasms. The constant exposure of the tissues of the mouth to thermal changes, to acids of external and internal origin, to influences such as nicotine in the case of excessive smokers and tobacco chewers, notwithstanding recent evidence to the contrary, and the constant irritation of bacterial activities offers a favorable site for the establishment of embryonic growths. The junction of skin and mucous membrane surfaces and of more or less different mucous membrane covered tissues is also apparently favorable for the development of cancer. Thus it naturally follows that practically all of the different forms of tumor are found in this region except those that only affect tissues limited to some other special region as for example the glioma. In addition to the opportunities for malignant growths which other anatomical fields offer, there are in close association with the buccal cavity special organs, the benign affections of which offer an infinite variety of diseased conditions that require definite understanding in order to recognize their necessary distinctions in diagnosis. These organs themselves and their embryonic developmental characteristics are also frequently responsible for distinct types of tumors which may be either of the adult type or embryonic in character. For example, the enamel of the teeth is developed from the epiblastic, the dentin from mesoblastic structures. The pericementum surrounding the roots of the teeth is related directly on the one hand to the pericementum to which it is attached and on the other to periosteum with bone attachment. In the pulps of the teeth nerves, blood vessel, and connective tissue, present all of the elements necessary for tumor growth and as might be expected there are degenerative processes of the pulps of teeth which are quite confusing in their resemblance to the beginning of neoplasms. Dentoalveolar apical abscesses resulting from pulp infection, with the characteristic granulomas and periosteal cysts are almost omnipresent. Dentigerous cysts or follicular odontoma usually filled with dark fluid sometimes attain large size, but their recognition is comparatively simple because they contain within the cyst unerupted teeth or the elements of partly developed teeth. Various other forms of odontoma also occur, such as the fibrous cementome, the radicular and the composite odontomas so designated because of the dominating structure of their composition and the compound follicular odontomas containing large numbers of more or less imperfectly developed teeth but with all of the tooth elements present. In addition to these there are dermoid cysts, proliferation cysts, parasitic cysts and multilocular cysts the same as found in other anatomical fields. The multilocular cysts as affecting the jaw on account of the situation and characteristics of the mandible require particularly careful consideration, almost as a distinct entity for clinical reasons although not properly subject to any such classification. The diseases of the pericementum and the reduction of local resistance by bacteria in the collection of debris between and around the teeth enhanced as these conditions so often are by ill-fitting bridgework, the constant irritation of dental plates worn in the mouth, nervous habits of which the individual may be quite unconscious but which cause constant lowgrade irritation of certain surfaces all of which tend to the thickening and local proliferation of tissue, the end results of which are often manifest confuse diagnosis by creating local hypertrophies of tissue which may easily be mistaken for benign or malignant tumors but which only require correction of the cause to effect their disappearance. On the other hand, such chronic inflammations may become factors leading to the establishment of malignancy in these situations. The salivary glands are not only affected by practically all forms of tumor but are subject to inflammatory processes as a result of infections which leave behind indurations that assume a more or less permanent character and which are also confusing inasmuch as there is always suspicion of the likelihood of a change in the character of such long continued glandular enlargements. Again, in certain glandular diseases injuries to the ducts may restrict or interfere with the free escape of saliva and so may cause enlargements of the glands that are very confusing. A number of exceedingly interesting examples of such cases could be cited. Because of wide differences of opinion among surgeons as to their character and occasionally disastrous results from wrong treatment, a description of the infectious conditions that affect the mouth and surrounding structures would necessarily extend the consideration of these affections

almost throughout the entire gamut of the pathologic evidences of microbic affections. It is well known that the mouth and surrounding structures form a particularly favorable lodgment place for actinomycosis. There are also many evidences of the exanthemata in this region which remain chronic. Luetic and tuberculous lesions are frequent and numerous and sometimes exceedingly confusing in this respect. The close relation of the nose and sinuses and the likelihood of the extension of disease from these associated parts is also important inasmuch as growths, originating in the maxillary sinus are often recognized only when there has been penetration through the oro-antral wall. Close association with the lymphatics not infrequently renders it quite difficult to differentiate between affections of these glands and many inflammatory infections more directly connected with the jaws and the tissues of the floor of the mouth. Ludwig's angina and the pathologic manifestations of the Vincent micro-organisms are very likely to be misleading unless properly differentiated and recognized.

Unfortunately there is no sovereign diagnostic remedy to offer, no complete solution of these problems and in this relation it is humiliating to feel that after my many years of rather wide observation and practice limited to this field and in charge of large clinics, my findings are to some extent negative. In the near future undoubtedly, the real causes and the exact character of malignant growths will undoubtedly be discovered. In the meantime, I can only offer you the conclusions which I have adopted for my own conduct of such cases. It sounds well upon occasions such as this to have enthusiastic speakers declare that every point of inflammation in the mouth must have immediate extirpation in order that cancer may be guarded against but without careful differentiation the pursuance of any such policy would undoubtedly be practically useless and in all likelihood in a high degree pernicious. The only simple rule of conduct which I have to offer you is that every destructive activity in any part or any enlargement of the tissues that shows tendency to become chronic and that cannot satisfactorily be accounted for by recognized diagnostic methods or explained by more or less exactly understood pathologic reasons should be regarded as suspicious and at the earliest opportunity be given microscopic and such other examinations as may be necessary to reveal its true character. This necessarily involves the consideration and exclusion of all the infections, developmental, mechanical, and chemical conditions which may be active in that region and only after their satisfactory exclusion need the consideration of neoplasms be seriously undertaken except where diagnosis is so plain that there can be no fear of mistake.

EARLY DIAGNOSIS IN GASTRO-INTESTINAL CARCINOMA.

By Phillip F. Rogers.

In spite of all modern refinements in the means of diagnosis of gastro-intestinal cancer—laboratory, X-ray, and clinical—the melancholy fact remains that carcinoma of this tract is *only occasionally diagnosed early;* hence its very high mortality, and the rarity with which it is permanently cured. There are several reasons for this. *In the first place,* with the exception of the rectum, the entire region is so situated in the body as to make early recognition of neoplasms difficult if not impossible. By the time the tumor masses can be felt by the palpating finger, they have usually gone beyond the stage of operability, and palliative measures only are warranted. These give temporary relief and may often prolong life considerably, but the grim reaper, cancer, is always on the job and sooner or later—usually sooner—gets his victim if some intercurrent disease does not cheat him. *In the second place,* the onset of abdominal cancer is commonly so insidious as to produce *no early subjective* symptoms, and if there are no subjective symptoms the patient does not consult his doctor, hence the condition is generally far advanced by the time the doctor first sees the case. *In the third place,* when subjective symptoms *do* occur early, they are often merely the symptoms of ordinary indigestion—especially in gastric involvement—gas eructations, and indefinite epigastric discomfort, so diagnosed by the patient (whose diagnosis is all too often accepted without question and without examination by the doctor). So precious time is lost while the true condition goes unrecognized. It is a great pity that pain—severe and persistent—is not an early symptom, for pain always demands attention, and if persistent, calls for careful investigation.

There is just one symptom that is *sometimes* early—unfortunately only too seldom—that at

once suggests the possibility of malignancy and so puts the physician on his guard, and that symptom is *obstruction.* Oesophageal cancer, on account of its deep-seated location, difficult approach and tendency to invade the mediastinum, is a hopeless proposition anyway, even if diagnosed early, unless time and further experience shows it amenable to radium treatment. Of course its *very first* symptom is that of obstruction—dysphagia or difficult swallowing—with early regurgitation of solids and later of fluids. It is commonly in the lower portion of the œsophagus at the cardiac orifice of the stomach, and care must be taken to differentiate it from traumatic or cicatritial stricture, from cardiospasm, and from obstruction due to pressure from without by aneurism of the aorta, mediastinal tumor, enlarged mediastinal glands, enlarged thyroid or vertebral abscess. Much may be learned of the nature of the obstruction by the very cautious use of the oesophagoscope, and the diagnosis of cancer is sometimes clinched by the bringing up of tumor particles through the stomach tube, the microscope demonstrating their carcinomatous nature. Excision of specimens for microscopic examination is a very dangerous procedure, as it may result in uncontrollable bleeding. It is vitally important to differentiate between malignancy and cicatritial contraction, for the latter is amenable to curative treatment by means of dilatation with sounds, bougies and pneumatic devises. These latter procedures, however, in the presence of carcinoma may result in perforation into the mediastinum with a rapidly fatal termination. The history of a foreign body swallowed and lodged, or what is much more common, some corrosive poison taken by mistake—or even intentionally—will point at once to cicatritial stenosis, while the X-ray will often help to demonstrate the presence of aneurism or mediastinal masses. It is a safe assumption when progressive dysphagia and rapid emaciation appear in a person of 50 or over, who gives no history of corrosion symptoms, and who has formerly had no such difficulty, that the trouble is cancer.

Seventy per cent of all *gastric cancers* are in the pyloric end of the stomach. This fact in itself brightens the outlook for the reason that in a good many cases obstruction is an early symptom manifesting itself by interference with gastric motility, with resultant dilatation and distention, pain, gas eructations and vomiting some time after taking food. The vomitus often contains decomposed food which has been in the stomach a day or more. Of course, rapid asthenia and emaciation take place, but if the obstructive symptoms are observed early enough, radical cure through partial gastrectomy is still possible and the number of these cases that have lived five years is constantly increasing. In these cases a palpable movable tumor in the region of the pylorus is often found before operation, but the utterly pessimistic dictum that "when a palpable tumor is found the case is already inoperable" does not hold. Cancer at the cardiac end or on the greater or lesser curvature may readily develop to the point of inoperability before producing symptoms, because of metastases to neighboring lymph glands or invasion of adjacent tissues. Lehrat says that 9 per cent of gastric ulcers develop cancer directly. Ochsner and others believe that the irritation due to the scars of healed ulcers furnish the starting point for the majority of gastric cancers. Certainly the fact of the location of most of the cancers and nearly all the ulcers in the pyloric end of the stomach is strongly suggestive of a possible relationship between the two conditions. Recurrent symptoms of ulcer after a long period of quiescence, is not uncommonly the first symptom of developing malignancy, and ulcer patients over 40 should always be looked upon with suspicion. Radiography of the stomach is often of the greatest value in making an early diagnosis, and of course the laboratory tests of stomach contents for blood and absence of HCl, and of the stools for frank or occult blood should never be omitted. But if these, or the clinical findings are depended on, many cases will go undiagnosed until it is too late. In no condition is exploratory laparotomy more imperative or more helpful than in cases under strong suspicion of malignancy. It is often the only means of arriving at an early diagnosis.

We need not dwell upon cancer of the *liver,* for it is always secondary to cancer elsewhere in the abdomen, and is inoperable anyway. Cancer of the *gall bladder* may result from the long continual irritation of gall stones. It is probably never diagnosed early except incidental to operation for the original condition. It may be suspected in cases where gall stones are believed to have existed and where a subcostal mass gradually develops accompanied by gradually developing jaun-

dice, indicative of extension to or pressure upon the common duct.

Cancer of the *pancreas* usually arises in the head of the organ and very early produces obstruction of the common duct which joins the duct of Wirsung at that point. Indefinite epigastric discomfort accompanied by early appearance of and rapidly deepening jaundice, and liver enlargement without other symptoms, should always suggest this condition. If the jaundice persists beyond a few weeks, and fatty stools appear, it is practically certain evidence of pancreatic malignancy. This form of the disease also is inoperable.

Cancer of the *intestine* is practically limited to the colon, sigmoid and rectum. It is seldom found in the small intestine. If it involves only one side of the gut at first, it may progress to an inoperable state before producing symptoms, but if it assumes the girdle form it may cause obstructive symptoms early and will be disclosed by an exploratory laparotomy, even if not suspected in advance and can often be removed with resulting cure. If blood in the stools, asthenia and emaciation are the first symptoms, it is generally too late to effect complete removal. The localization of the obstruction may be made—even in the absence of tumor—by the aid of the bismuth meal and X-ray, and by observing peristaltic waves which terminate at a certain point. Of course in marked obstruction, whether early or late, there is gas distention above the stricture. Cancer of the *rectum* is characterized sometimes fairly early by irregular bowel actions, constipation, alternating with diarrhoea, passage of thick mucous either with stools or between times, and more or less bleeding. The feces are apt to assume a thin ribbon form due to being squeezed through the strictured lumen. Hemorrhoids must be excluded and a thorough digital examination of the rectum made, and if no mass can be felt, the proctoscope and sigmoidoscope must be brought into play. If palpable, the feel is characteristic— a hard nodular mass with central or lateral aperture, and tumor like projections on its surface, differing markedly from the feel of smooth cicatritial strictures. Every case of bowel irregularity of whatever kind, in a person in middle life, who has formerly been regular in this respect, and especially if accompanied by the occasional appearance of blood in the stool, calls for a thorough-going examination, and should always give rise to the suspicion of malignancy.

I believe the average physician is partly responsible for the vast number of gastro-intestinal carcinomas that fail of early diagnosis, because he is not sufficiently on his guard against possible malignancy in the presence of certain suggestive symptoms, and even disregards or fails to attach sufficient importance to signs and sensations which the patient relates to him.

In closing, I wish to emphasize once more the necessity of having constantly in mind the possibility of cancer in the presence of *obstructive symptoms anywhere in the digestive tract,* but especially in the stomach. If we as a profession are constantly on the alert in this matter, we will be able gradually to improve the situation and to increase the number of EARLY DIAGNOSES.

CANCER OF THE BREAST.

By J. L. Yates.

Dr. Bunting has given the basis for diagnosis and treatment of cancer. This disease is neither an isolated process like the growth of bacteria in a test tube nor a stereotyped histologic abnormality. Cancer is a biologic contest between unrestrained proliferation of epithelial cells for which no specific cause other than chronic irritation has been demonstrated and defensive reactions of the host against the local and general irritations produced by abnormal cellular activities. Early dissemination of malignant cells from the initial lesion is usual if not constant. The cells may be promptly destroyed or produce metastatic tumors or they may lie dormant for years and then cause death by a resumption of malignant characteristics. Consequently, it is erroneous either to regard cancer as a strictly localized process or to believe that a "cure" depends upon removal or destruction of every cancer cell.

It is indeed questionable if cancer is ever a curable disease, if by "cure" it is understood that a disease and all tendency to a recrudescence of that disease have been permanently eliminated.

Temporary and lasting recoveries occur in cancer as they do in tuberculosis. None presume now that tuberculosis is ever cured to the extent of removing all living tubercle bacilli from the body. Dormant tubercle bacilli are occasionally reactivated after years of quiescence through some

break in local or general resistance and not infrequently rapidly cause death. Apparently the same holds true in cancer. All who reach the age of forty have tuberculosis. The majority do not show and may never have exhibited symptoms of this infection. Probably all who survive middle age have been subjected to the influences that cause cancer. The great majority possess sufficient native resistance never to permit the lesion to become established. A small proportion develop cancer but control it spontaneously by defensive reactions adequate to overcome the disease offensive. Only those achieve the disease, as it is now recognized, who suffer from some biologic deficiency that makes them susceptible. The defect may be acquired, more often it is inherent, or, as Slye believes, it is inherited.

According to present knowledge the prevention and treatment of cancer depends upon the elimination of focal irritation to epithelium and upon the maintenance of the highest physiologic proficiency to provide the requisite local and general resistance to prevent or to overcome the disease.

Application of these principles to affections of the breast is simple. Patients seek advice because of lumps in the gland, discharge from or eczema-like eruptions about the nipple or enlarged axillary or cervical lymph glands. Despite the facts that age, sex and previous conditions of lactation, mastitis, etc., establish the diagnostic probabilities, few individuals wish to be treated upon gamblers' percentages, particularly for cancer. If those patients be eliminated in whom a diagnosis of cancer is certain, there remains a considerable group in whom a certain diagnosis is impossible.. Under such conditions it is obligatory to consider the lesion as malign until it can be *promptly* proved innocent. This can be accomplished usually by a frozen section diagnosis if it be done properly. It must be remembered however that cancer is protean in its manifestations and that a positive diagnosis is not always possible. If there be a reasonable doubt, an immediate radical operation is indicated because the mortality of such operations is approximately one per cent whereas the mortality of malignant growths treated as benign is approximately one hundred per cent.

Surgeons must remember that all operation can be expected to produce is a regional cure of the disease. Part of this regional cure will depend upon the return of function in the arm and part upon the completeness of the extirpation. Halsted's work in this field fulfills both requirements and is the one safe guide.*

Mechanical attention to local resistance or local function is insufficient. General resistance or hematopoietic integrity must be safeguarded. In general the accepted mode of treating tuberculosis is satisfactory in the postoperative treatment. Physicians, surgeons and laymen must come to realize that treatment of cancer is not the treatment of a disease but of a patient suffering from a disease and that such treatment does not end but begins in the operating room and is to be continued throughout that patient's life.

There is more reason for optimism than for pessimism in this conception of cancer pathogenesis. It has been urged not to tell the laity that cancer is an incurable disease because there would be a loss of faith in treatment and consequent despondency. Truth never did much harm. The number of recoveries will increase if patients take care of themselves after they get proper attention and advice. Indeed cancer patients may come to be classed with the fortunate children who have enough tuberculosis to obtain the tremendous advantage of outdoor schools.

SYMPTOMS AND DIAGNOSIS OF CANCER OF THE FEMALE GENERATIVE TRACT.

By J. P. McMahon.

Approximately 75 patients suffering with malignant lesions of the generative tract were examined during the last two years.

The symptoms described are in a measure based upon the experience gained in recording complete histories and conducting physical examinations of these cases. The facts derived show not only pronounced ignorance on the part of the patients with reference to early and even late symptoms of cancer, but constitute an indictment of our own membership in that there are still many among us who practice in dark offices devoid of proper artificial light and without modern diagnostic equipment—who make no effort to elicit adequate histories—who pass upon symptoms suggesting cancer of the breast through corsets and brassiers—who pass upon symptoms suggesting cancer of the female generative tract through the modern day bloomers—who pass upon symptoms suggesting cancer of

*Halsted, Bulletin of The Johns Hopkins Hospital, October, 1921.

the anus and lower bowel without using a proctoscope, sigmoidoscope or even a finger cot—who still treat cancer of the breast with poultices and cancer of the vulva with ointments—who still treat cancer of the cervix and corpus uteri with ergot, hydrastis and iron administered by mouth, and by means of vaginal douches, topical applications of $AgNO_3$—$CuSO_4$—$FeSO_4$, and Tr. of Iodine, the introduction of tampons, and not infrequently by the performance of plastics on the cervix. After having established a diagnosis of cancer these same colleagues are not sufficiently frank with their patients and fail to make serious attempt to impress upon them the dangers which lurk in traveling the *by-ways* of medicine and seeking false *gods* before submitting to approved treatment.

Being located on the surface of the body as some of the female generative organs are and communicating with the surface as the others do thereby giving rise to both subjective and objective symptoms,—early signs of cancer are understandable and recognizable by every woman of average intelligence.

Early diagnosis of malignant lesions of this group of organs is not particularly difficult because they may be readily inspected and palpated, and easily lend themselves to snipping, cautery sectioning and curetting; procedures which should be employed in questionable cases.

The diagnosis of cancer of the female generative organs as diagnosed elsewhere, is dependent upon a knowledge and proper interpretation of embryologic deviations, gross anatomic and histopathologic changes, and abnormalities in physiologic functioning.

In order to better understand the nature of epithelial tumors of the female generative canal, it may not be amiss to briefly *review* the *histology* of the *mucosa* of the organs. The *labia majora* necessarily have the same histologic structure as the skin. The *labia minora* contain sebaceous glands independent of hair follicles. The *clitoris* is an erectile body and possesses corpora cavernosa and a net work of veins. The mucous membrane of the *vestibule*—contains glands near the clitoris, external meatus, and the glands of Bartholin, all of which secrete mucus. The epithelium of the *vaginal mucosa,* deep parts of the ducts located at the orifice and on the cervix is stratified and the epithelium of the upper part of these ducts is squamous. The vaginal walls do not contain glands. *Uterus*—the cervix and external os are covered with squamous cells which extend into the cervix where they become stratified. These squamous cells extend higher in the cervix after the first pregnancy. The stratified epithelium changes to simple columnar and ciliated in the upper part of the cervix. Mucous cells develop in epithelial pits throughout the cervical canal and produce a secretion which occludes it during pregnancy. The retention of these secretions gives rise to cysts or ovules of Naboth. The uterine cavity is lined with simple columnar epithelium which is ciliated in parts. The epithelial cells form slender tubular pits which become uterine glands and which extend to the muscularis. The occlusion of the ducts gives rise to retention cysts. *Fallopian Tubes*—the walls consist of a serosa, muscularis and mucosa—the latter being lined chiefly by small columnar ciliated epithelium, the stroke of the cilia being toward the uterus. There are areas of nonciliated cells which produce a mucoid fluid. Mucous cells are absent. *Ovary*—the ovaries are covered by a modified peritoneum in which the cells are flat, polygonal and stratified, closely resembling endothelium. The relation of the cortical stroma to the loose tissue of the ovary is so characteristic as to make it readily identifiable even if devoid of ova. It is frequently possible to recognize ovarian tissue grossly because of maturing ova, Graffian follicle, and Corpora Lutea.

Dr. Bunting has given us a lucid description of the modern understanding of cancer. Etymologically speaking, cancer means a crab-like tumor so named by the ancients because they observed that large veins surrounded surface lesions. The term was formerly frequently used to denote any malignant growth especially when attended by ulceration, cachexia, emaciation and pronounced pain. We shall confine our remarks to accord with the modern understanding of the term and consider only malignant lesions of epithelial origin. As employed clinically "cancer" implies a lawless growth of epithelial cells which is at first localized but later spreads by continuity, contiguity, and by means of the circulation thereby producing secondary tumors. These abnormal cells produce systemic toxaemia which results in malnutrition, loss of weight and strength, and in ulceration which admits bacterial infection and ultimately cause death.

Carcinoma of the female generative organs

caused 20,000 deaths in the U. S., 262 deaths in Wisconsin, and 43 deaths in Milwaukee during 1920.

Carcinoma of the female generative tract naturally may be subdivided into that of the Vulva, Vagina, Uterus, Fallopian tubes, Ovaries, and Parovarii.

CARCINOMA OF THE VULVA. Constitutes 20% of all cancer in women. It has occurred at the age of 20 but usually occurs after 60.

Histopathology. Usually an epithelioma of squamous cell variety. It may be of an encephaloid or scirrhus type, either of which may arise from the mucous surfaces especially of the clitoris or from malignant transformation of simple adenoma of the clitoris or sweat, Skenes or Bartholins glands, the latter necessarily becoming an adenocarcinoma. Melanoma of the vulva is comparatively frequent.

Exciting causes and precancerous symptoms—It is often preceded by local infection, lues, pruritus and leukoplakia. These are followed by hypertrophy and fissuring of the epidermis and later localized edema, papules, vesicles and warts which in turn are followed by sclerosis, atrophy and contractures. Epithelioma develops upon this abnormal cellular structure.

Symptoms of actual cancer—Warty excrescences appear on the clitoris producing lobulation, tumefaction of the sweat glands in and about the labia, tumefaction of Skenes and Bartholins glands and ducts and all are followed by diffuse infiltration. These tumors later become ulcerated permitting the ingress of infection which furthers extension to the inguinal glands, deep pelvic glands, abdominal nodes, uterus, anus, rectum, lungs, etc. This may take place any time in from 3 months to 3 years. The vaginal mucosa usually escapes. Owing to the abundant vascular and lymphatic supply, and to the inherent malignancy of the squamous cell lesions, ulceration, infection and metastasis develop and are necessarily followed by cachexia. Carcinoma of the vulva is very malignant and usually ends fatally in 1 year unless treated early and radically. Recurrence in from 3 to 6 years is the rule.

CARCINOMA OF THE VAGINA. Primary carcinoma of the vagina constitutes only 0.5% of all cancer in women. Secondary carcinoma of the vagina is more frequent because of extension from the vulva, cervix, bladder and rectum.

Histopathology—This tumor usually arises from squamous epithelium, but the cylindrical cell variety is encountered. Hornification and pearl formation are not extensive. Atypical adenoepithelioma develops upon follicles at the cervical margins. Congenital abnormalities along the vaginal canal gives rise to heterotopic vulvar or cervical cystadenofibromata and adenocarcinomata. The usual form is a papillary infiltrating growth on the upper segment of the posterior wall which gradually extends throughout the canal and frequently through the vaginal walls invading the cervix above and urethral and vaginal orifices and vulva below.

Exciting causes and precancerous symptoms—Chronic infections, pessaries, obstetric traumatism, leukoplakia.

Symptoms of actual carcinoma of vagina—The subjective symptoms are: increased leucorrhea, spotting, tumefaction, sensation of pressure, orificial pruritus and pain. Objectively single or multiple flat warts appear, infiltrate the surrounding tissues and develop into cauliflower, villus, or fungoid, highly vascular and frequently ulcerated tumors. Extension is dependent upon lymphatic drainage and takes place early and rapidly—into the iliopelvic chain from the upper part of the vagina—into the lower iliopelvic and hypogastric groups from the middle of the vagina—into the inguinal nodes from the lower part of the vagina and into the broad ligaments, uterine wall, both tubes and kidneys, the liver, lungs and bones. The vessels become constricted leading to edema, pressure on nerves with attendant sensitiveness and unbearable pain. Obstruction of the urethra and ureters is followed by cystitis, hydronephrosis, uremia, etc., and are frequent complications. Ulceration followed by infection, fistulae, local and general peritonitis, usually terminates life in from 8 months to 2 years, unless early treatment is instituted. A permanent cure is rarely effected.

CARCINOMA OF UTERUS.

Histopathology carcinoma cervix—90% of Carcinoma of the uterus appears in the cervix.

A combined pathological and clinical classification based upon a review of different authorities would be somewhat as follows:

Squamous celled epidermoid acanthoma spine or prickle celled comprise 60% of carcinoma of the cervix.

Glandular or adenocarcinoma—usually appears as a papillary or cauliflower type—15%.

Cylindrical cell pavement type—least frequent glandular form, cells retain original shape, not undergoing metaplasia to polyhedral, stratified or mixed carcinoma of cervix: Probably result of intermingling of corpus and cervical lesions.

Mucous adenocarcinoma of cervix is rare.

Atypical carcinoma of the cervix:

a. Cirrhus — an overgrowth of connective tissue which is nature's effort to confine growth.
b. Simple cystadenoma — recurs locally, metastasizes to vagina and should be considered a precancerous lesion.
c. Endothelioma—small cells growing in long narrow columns which may develop into epithelioma and become quite malignant.
d. Parathelioma—rapidly growing atypical epithelioma arising around blood vessels.
e. Sarcomatoid—rare in cervix.

Histopathology of carcinoma corpus—comprises 10% carcinoma of the uterus.

Malignant adenoma most frequent. 10% myoma corpus become malignant.

Papillary adenocarcinoma—benign papillomata transformed and resemble papilloma bladder.

Alveolar carcinoma rare—quite malignant—resembles round cell sarcoma.

Squamous celled adenocarcinoma corpus—cuboidal or cylindrical cells which have been transformed into squamous. Frequently develops at site of leukoplakia. May produce adenoacanthoma spine or prickle cells with pearl formation. Difficult to diagnose from chronic endometritis.

Choriocarcinoma—disorderly overgrowth of syncytial and Langhans cells with failure to produce villi. The cells, as is characteristic of malignant cells generally are capable of reproduction after separation from usual site of nutrition.

Predisposing and exciting causes carcinoma uterus—The exact cause of different types of carcinoma of the uterus is unknown. Whether hypertrophied cells become neoplastic is not determined, but local irritation and attendant hyperemia are probably able to produce malignant transformation. Possibly anatomic and physiologic characteristics such as structure, increased metabolism of pregnancy, irritation, trauma and lacerations incident to repeated deliveries and chronic infections are predisposing factors. Clinicians and pathologists have for some time observed a relationship between carcinoma and pregnancy in that carcinomatuous tumors regardless of location grow more rapidly after pregnancy takes place and especially carcinoma of the breasts. This fact although not necessarily more applicable to carcinoma of the breasts is better established because their exposed position enables earlier and more accurate observation. A recent investigator has shown that approximately 85% of women who have had histologically proven carcinoma of one breast completely removed develop carcinoma of the remaining breast shortly after the advent of subsequent pregnancies which took place from two to ten years after the removal of the first breast. Pathologists have observed a similarity between the histologic changes in the acinar epithilium preparatory to lactation and those known to be necessary steps in the development of malignancy. The majority of women who have had cancer of the uterus have borne five children. In view of these facts, is it not possible that the alterations in metabolism accompanying the periodic changes in physiology and the strain attendant upon the discharge of the special functions of the uterus and breasts may be important factors in the incidence of cancer in these organs. Chronic endocervicitis, and hypertrophied papillae are predisposing factors if not precancerous lesions. Cervical erosions and adenomyoma are definitely precancerous.

Precancerous microscopic changes in the cervix—The sequence of precancerous histologic changes have been described somewhat as follows:

Irregular hypertrophy of the epithelial cells with granular hyperchromatic nuclei. Then loss of regular stratification of cell layers especially of the basal cells, and finally, a downward growth of epithelial papilla, the latter actually constituting malignancy.

Rubin describes an early but definite proliferation of cylindrical and squamous cells covering old erosions and surrounding glands with atypical downward growth of papillae, but every case answering this description does not become malignant.

Leukoplakic patches—areas of epidermization in erosions, atypical cervical polyps and adenomatoid outgrowths of cervical glands precede carcinoma.

Early objective changes in the cervix. These are seldom recognized but are as follows:

Very small tumors in the form of hard nodules in the cervical lips. Circumscribed indurated portion of cervical canal. Diffuse low papillary outgrowths. As usually observed there are extensive induration and swelling of cervix, cauliflower or outgrowths covering much of canal, excavated ulcers. Cullen emphasizes induration without loss of tissue, disintegration, and excavation.

Rogeur and Veit distinguish between carcinoma of portio and carcinoma of cervical canal, and state that squamous cell and adenocarcinoma frequently arise from the above regions; that the portio type produces marked thickening of the lip or the whole lower portion of the cervical wall, the canal remaining intact; that cervical tumors involve the canal first and considerably later the portio; that cervical carcinoma may be regarded as a true uterine tumor, may excavate the whole cervix, invade the peritoneum and extend upwards or downwards.

More advanced lesions appear as wide superficial extensions with polypoid or cauliflower outgrowths which may completely obstruct the canal causing retention of secretions—as ulcerating carcinoma partially or completely destroying the cervix and perforating the bladder and rectum, or infiltrating carcinoma which thickens the cervix extending along the vagina and endometrium and causing obstruction and pyometria.

Early precancerous microscopic changes in the corpus. These at the same time constitute the only early objective manifestation of carcinoma of the corpus because they have to be elicited by the curette. The distinction between chronic glandular endometritis and chronic cellular endometritis with attendant epidermization and commencing malignancy is very difficult. Leukoplakic uteri is a term often applied to the above epidermization and it frequently follows curettage and escharotic treatment. If cholesterin be deposited in this tissue, it is termed a choleastoma uteri. Squamous cell carcinoma of the cervix often produces cells which have the appearance of stratified cells. Whether they are a direct extension from the corpus or a transformation of cervical cells is unknown. Since islands of squamous epithelium are found in normal fetal endometrium, it may be assumed that squamous celled carcinoma of the corpus uteri in the adult is a result of such early malformation. Finally extensive epidermization or squamous cell scrapings from the corpus should always be regarded as an early precancerous change if not actual carcinoma.

Subjective symptoms carcinoma of cervix before the Menopause. Whitish or yellowish discharge gradually becoming watery and very profuse—may be watery at start and continue as watery.

Spotting between periods usually after exercise and as late as 24 hours after a douche and coitus. Menorrhagia; metrorrhagia; malodor. Pain — late symptom—must be displaced in minds of laiety as a symptom of carcinoma by earlier subjective signs as unaccountable leukorrhea and irregular flowing.

Subjective symptoms carcinoma of cervix after the Menopause. Whitish or yellowish discharge gradually becoming watery and very profuse—may be watery at start and continue as watery. Occasional blood streaks, spotting, clots. Hemorrhage—particularly after exertion such as stools, douching, and after internal examinations. Malodor. Pain—late symptom.

A refined diagnosis should always be attempted. This is especially true in carcinoma of the cervix which occurs mainly as squamous cell (60%) and adenocarcinoma (15%) a differentiation of which is important from the standpoint of treatment as well as prognosis.

Objective symptoms EARLY Squamous Cell Carcinoma Cervix. It constitutes 60% of cancer of the cervix. Localized induration of cervix without loss of tissue; nodules at external os and in the cervix. Fissures and superficial erosions; circumscribed or diffuse low papillary outgrowths.

Objective symptoms ADVANCED Squamous Cell Carcinoma Cervix. Extensive induration cervix; hypertrophy cervix and parametrium; ulceration; disintegration; excavation; craterization; induration of vaginal wall, parametrium, adnexa, bladder and rectum.

Objective symptoms EARLY Adenocarcinoma Cervix. This type constitutes 15% of cancer of the cervix. Excessive discharge from cervix; papillary outgrowths; hypertrophy upper half cervix—external os intact. Multiple papillary outgrowths constituting cauliflower lesions which may fill much of vaginal canal; retention uterine secretions; pyometria. Ulceration of cauliflower excresences at a distance from base causes pronounced

malodorous discharge. Induration of the parametria, adnexa, bladder and rectum.

Objective symptoms ADVANCED Adenocarcinoma cervix. Increased discharge; large papillary outgrowths; hypertrophy whole of cervix with formation of nodular tumors; erosions and ulcerations; cauliflower growth may fill practically all vaginal canal; ulceration of growth with attendant malodor; retention of secretions with distention of uterus; pyometria; pronounced fetid odor; acute hemorrhage; diffuse induration.

Subjective and objective symptoms EARLY carcinoma of Corpus. The subjective and objective symptoms and differential diagnosis of cancer of the corpus is necessarily very similar to those detailed under the headings "Early and Advanced Adenocarcinoma of Cervix." Definite diagnosis in the early stages can only be made by curettage and microscopic examinations.

One must be careful to differentiate early carcinoma of the corpus from chronic glandular endometritis and chronic cellular endometritis especially if attended with senile changes, leukoplakie uteri and epidermization, the latter often follows curettment and escharotic treatment. It must be remembered that since squamous epithelium may normally be found in the fetal endometrium it may persist and give rise to the presence of normal and abnormal squamous cells in the adult endometrium. All scrapings from the uterine cavity showing squamous cells should however be clinically regarded as precancerous change.

Advanced carcinoma of the corpus, of course, produces an appreciable enlargement and irregular outline of the uterus.

Subjective and objective symptoms ADVANCED cancer of Corpus. These are all of the symptoms of advanced adenocarcinoma of the cervix plus the following: extremely acute uterine hemorrhage; foul odor; sensation of fulness and pressure—severe pain in womb, bladder, rectum, back and thighs, and frequent painful urination, hematuria, obstipation, bloody stools, anorexia, cachexia, waxy complexion.

CHORIOCARCINOMA. This neoplasm was first described in 1867. Its origin and pathology has probably given rise to more controversy than any other tumor of the generative tract, and it is only comparatively recent that Marchand proved that it is of chorionic epithelial origin.

Histopathology of Choriocarcinoma. The histologic changes are quite complex.

Owing to the intimate relation existing between the chorionic villi and the maternal circulation, the dividing line between transposition of chorionic cells and actual metastasis is difficult to determine. Syncytial endometritis and chorioadenoma, the former being a degenerative process and the latter a localized proliferative effort of Langhan's layer and the syncytial cells are frequent concomitants and sequelae of pregnancy.

Choriocarcinoma proper is a disorderly epithelial overgrowth of stroma, syncytial and Langhan's cells, the latter being practically devoid of stroma, appear in compact masses, invade and dissect the uterine wall, metastasize early and do not reproduce villi. The extension takes place through the vaginal veins—producing multiple tumors in the lungs (30%), brain (10%), and other organs.

Subjective Symptoms of Choriocarcinoma. It is comparatively rare, only 500 authentic cases have been reported. 15% of hydatid moles become choriocarcinoma and 40% of choriocarcinoma are preceded by hydatid moles. 30% follow abortion; 22% develop during the late stage of pregnancy; 12% follow ectopic gestation and 66% occur after the fifth pregnancy. The symptoms are naturally those of the precedent conditions just cited, which, however, become aggravated when choriocarcinoma develops. Metrorrhagia is the most characteristic symptom, but need not necessarily be severe. The less malignant lesions cause death in from six to eighteen months. The very malignant types are ushered in by chill followed by cough, hemoptysis, dyspanoea, anemia, cachexia, vomiting, delirium, hemiplegia, convulsions, all of which make differentiation from puerperal infection difficult. This form terminates fatally in from thirty to sixty days.

Objective symptoms of Choriocarcinoma. The uterus enlarges slowly or rapidly in from four weeks to four years after the interruption of pregnancy, dependent upon the degree of malignancy. The uterine walls and broad ligaments become cystic and frequently perforate. Bluish vesicular, cervical and vaginal transplants resembling hematoma or cystic-sarcoma appear. Localized gangrene on the cervical and vaginal canals appear in the terminal stage and cause a malodorous discharge. Vesico-vaginal and recto-vaginal fistulae frequently develop.

Diagnosis is dependent upon microscopic examination of vaginal transplants, uterine scrapings or autopsy findings.

Differential diagnosis Carcinoma of Cervix and Carcinoma of Corpus. Benign *fissures, indurations, erosions* and ulcerations of the external os and carcinoma of the lower cervical canal can be seen. All produce troublesome discharge which usually respond promptly to topical treatment. A 10% Cu SO_4 solution applied to ulcers on the cervix or vagina produces a bluish white coating which in the presence of benign lesions is readily pealed off without causing oozing or hemorrhage and the lesion heals after two or three treatments. Application of the same solution to a malignant ulcer also produces a bluish white coating, but the removal is followed by oozing and bleeding and repeated applications aggravate the ulcer.

The above mentioned discharges or *Leukorrhea* may be acute or chronic. The acute responds to appropriate treatment. The chronic form may be due to septic or gonorrheal endocervicitis, tubercular endometritis, polypi, fibrocystic tumors (the latter are apt to become malignant) fibro-myoma and carcinoma. Any and all of these may produce menorrhagia or metrorrhagia. The majority of these chronic leukorrheas also respond to appropriate treatment and if they do not a curettment and microscopic examination of scrapings is imperative.

Induration of the *cervix* may be due to scar tissue, fibromyoma and cystic disease.

Erosions and *ulcerations* of the *external Os* may be due to irritating discharges, eversions, lacerations, gonorrhea, syphilis, chancroid, tuberculosis, pessaries, the traumatism of abortions and deliveries, all of which are remedied by a removal of the cause and by constitutional and local treatment.

Erosions and *ulcerations* in the *upper cervical canal* and in the *uterine cavity* are usually precancerous or cancerous. They produce a discharge which is primarily white and later becomes profuse and watery in color and consistency. Because of inability to inspect the upper cervical and uterine cavities early diagnosis of cancer in these parts requires the careful recording of histories and thorough pelvic examinations frequently including a *diagnostic curettage.* Curettments for the purpose of making an early diagnosis of cancer of the corpus which practically always begins in the endometrium must frequently be repeated in order to differentiate a slow growing carcinoma from a fibromyoma which is undergoing malignancy. Curettment as a diagnostic procedure in tumors of long standing is often necessary to establish a definite diagnosis as to the cellular nature of the neoplasm.

Each physician should inquire and look for all of the above outlined subjective and objective symptoms in every woman examined. And when two or more are found they should be carefully evaluated from the viewpoint of bringing about the earliest possible diagnosis of precancerous and cancerous lesions.

CARCINOMA OF THE OVARIES. Despite the rather unusual embryologic history, varied histologic structure and complex function tumors of the ovaries are comparatively infrequent constituting only 8% of all tumors in women. A comprehensive classification of carcinoma of the ovaries is practically impossible because of the lack of understanding of the origin of many ovarian tumors. A classification based on histological and clinical characteristics is somewhat as follows:

Cystic adenocarcinoma.

Solid carcinoma.

Folliculoma malignum or carcinoma folliculoides.

Fibro-sarcoma.

Ovulogenic carcinoma.

Ungroupable forms such as squamous cell carcinoma, malignant adenofibroma, and melanoma.

Symptoms and clinical course of carcinoma of Ovaries. Primary carcinoma of the ovaries generally develops on papillary cysts and is rare. Secondary carcinoma of the ovaries as a result of extension from uterus, tubes, stomach, intestines, gall bladder, etc., are comparatively frequent and unfortunately are usually bilateral. There are no characteristic symptoms of carcinoma of the ovaries and diagnosis is practically always made after the abdomen has been opened with the exception of the solid adenocarcinoma which may be suspected.

CARCINOMA OF THE PAROVARII. The parovarii are lined with low cylindrical epithelium. Carcinoma arising from this epthelium has been described, but is extremely rare.

Symptoms of carcinoma of Parovarium. There are no characteristic symptoms. Definite diagno-

sis can only be made after the abdomen has been opened or at autopsy.

TREATMENT OF CANCER OF THE FEMALE GENERATIVE ORGANS. This discussion was primarily designed to review symptoms and diagnosis rather than treatment.

Early diagnosis renders the technical part of the treatment comparatively simple.

The Wertheim, the bimanual Percy cautery, and other radical operations formerly employed generally in the treatment of cancer of the cervix have absolutely failed to justify their being continued even when performed by the most skilled surgeons for the reason that the immediate mortality has been too high, the depression of the patient's general resistance too great and the extent they have prolonged life and alleviated suffering has been comparatively limited. Henry Janeway, John G. Clark, Howard Kelly, Mayo Clinic, John Pollak, T. J. Watkins, Arthur Curtis, Henry Schmitz and others have shown that radium and X-rays are much less hazardous and considerably more efficient when properly employed for the treatment of carcinoma of the cervix and adjacent parametria.

The necessity for building up and maintaining the patient's general resistance opens up new and difficult problems the solution of which will require extensive financial outlays. Owing to the prevalence of cancer and to results accruing from the similar management of tuberculosis and other diseases a start must and will be made.

The treatment of early adenocarcinoma of the fundus uteri is hysterectomy.

The treatment of choriocarcinoma has in the past been early and radical hysterectomy. Radium has been used successfully in a few cases, and it should receive consideration in all cases before undertaking hysterectomy. Neither hysterectomy nor radium are indicated for choriocarcinoma unless widespread local extension and general metastasis has been ruled out.

CANCER OF THE URINARY TRACT.

By E. A. Fletcher.

Scrotum. An epithelioma found especially in chimney sweeps and workers in derivatives of coal tar. A rare disease and begins as a wart or ulcer. Must be differentiated from condyloma latum and condyloma accuminatum and from chancre.

Penis. This type of cancer is relatively common, forming two to three per cent of all cancer in man. Two-thirds of all cases are associated with phimosis. It is rare in the Hebrew race. Syphilis and venereal warts may also be predisposing factors. Epithelioma of the penis may appear as (1) wart, (2) papule, or (3) ulcer. It develops on the glands in the coronary sulcus or on the under surface of the prepuce. For a considerable time it may remain as a warty tumor and attain considerable size. Nearly all papillary tumors of the glands are cancerous. Cancer of the penis does not possess a high degree of malignancy. It extends slowly and may invade and ulcerate the cavernous and spongy bodies. The superficial inguinal lymph nodes are generally considerably enlarged. Metastases may occur in these and in the deep nodes in the pelvis and abdomen or in the viscera, especially the liver. These patients generally come to the physician early but to operation too late. Pain is not an early symptom. Differential diagnosis should be made from condyloma accuminatum, condyloma latum, chancre and chancroid. Treatment: Excision of the superficial and deep lymphatics of the groin and Scarpa's triangle removing these and the prepubic fat and the suspensory ligament and penis in one piece. Working toward the penis and removing this last. Recurrence occurs generally in the lymph nodes but not in the stump.

Testicle. In 110,000 general hospital admissions there were reported 65 patients with malignant testicles. At the present time the tendency to regard the great majority of testicular tumors as teratomata prevails and it is probable that ectopia predisposes to malignancy. Nearly all tumors of the testicle are highly malignant. Metastases occur early and recurrence after removal is the rule. If a cancer of the testicle is incised during an orchidectomy there is always a local recurrence. As a rule the epididymis is not involved in cancer of the testicle. It is often difficult to diagnose the nature of a tumor of the testicle. A thick wall hydrocele or a hematocele, which is very rare, may resemble a sarcocele. A cancer of the testicle may develop in an individual with a strongly positive blood Wassermann. Rarely, cancer may involve the epididymis alone, resembling for a time a tuberculous process.

Symptoms, except from the presence of a tumor, may be insignificant. It should not be forgotten that a hydrocele may be associated

with a gummatous testicle, but in the latter condition it is very rare. The tumor is somewhat pyriform in shape, non-translucent in areas. It may be very hard and in other areas fluctuant or semi-solid. It is freely movable. The superficial veins may be greatly dilated and tortuous, and the testicular sensation is maintained. Adeno carcinoma of the testicle is especially apt to be associated with hemorrhages into the tumor. Embryonal carcinoma of the testicle grows rapidly and may reach a considerable size. Like cancers elsewhere, a cancer of the testicle may undergo necrosis, suppuration and ulceration. Tuberculosis of the testicle is very rarely, if ever primary and is associated with tuberculosis of the epididymis, of the prostate, or seminal vesicle or with tuberculosis of the upper urinary tract. In dealing with tumors of the testicle not evidently tuberculous mercury and potassium iodide should be pushed for not over ten days in order to eliminate syphilis. A gumma of the testicle disappears rapidly under treatment, and so far as I know is always associated with a 100 per cent positive Wassermann. Prior to operation a careful physical examination, including an X-ray examination of the chest, should be done in order to detect metastases. In operating on cancer of the testicle a radical operation should be done removing the glands along the inferior vena cava, the fascia over the iliacus and psoas muscles, the spermatic blood vessels, and cord and the involved testicle, together with the lymphatic nodes connected with these structures. Barringer has used the Radium pack (12,000 mg. hours) over the testicle and cord and over the abdomen along the path of the spermatic vessels. The more malignant the tumor the more sensitive to radium. Following the Radium pack the tumor decreases rapidly in size, and some weeks or months are allowed to elapse before the radical operation is done. The simple operation of orchidectomy in 59 cases was followed by death in all but two patients within two years.

Urethra. Cancer of the urethra is rare, only 100 cases being reported. In men it generally begins in the perineal urethra and is mistaken for a stricture. In women it generally begins at or near the meatus and is sometimes mistaken for carunele. It is predisposed to by stricture and generally is operated upon two or three times as such before a correct diagnosis has been made. Generally the first symptoms are functional. (1) Dysuria, distorted stream; (2) Ardor; (3) Discharge, pus or blood; (4) Radiating pains; (5) Fistula. The condition must be differentiated from stricture, carunele, and leucoplasia. Radium may be of service in these most unpromising cases.

Prostate. Cancer of the prostate is very common, seldom giving rise to symptoms until well advanced. It always begins in the posterior lobe whereas adenoma never begins in this lobe. In Young's clinic 22 per cent of the old men presenting themselves with obstruction to urination had cancer of the prostate. In about 20 per cent of the supposed benign hypertrophy cases there is more or less carcinomatous invasion. In three-quarters of the cases of cancer of the prostate there is an associated hypertrophy, and in one-quarter there is no hypertrophy. Cancer is never found in the adenomatous lobes except as a direct invasion from the posterior lobe. In 400 patients with cancer of the prostate at Johns Hopkins hospital in only 21 was the cancer limited to the prostate when the patient was first seen. In cancer of the prostate the gland is not uniformly involved, but may have scattered areas here and there so the disease may be overlooked. Sometimes the cancerous gland enlarges more rapidly than does the simple adenoma, and sometimes it is hardly at all enlarged. Cancer of the prostate begins in an apparently normal or in a hypertrophied gland. The bladder and the rectum are seldom involved, but the disease extends outward and upward going in the direction of least resistance involving the area between the seminal vesicles. In one-third of the cases there is a metastasis to the bones, and metastases rarely occur before the onset of obstructive symptoms. The average duration of life from the onset of symptoms is 28 months. A patient with cancer of the prostate will often go for one year or more after the onset of symptoms before seeing a physician, and the disease will then be well advanced. Symptoms:

(1) Nocturnal frequency 40 per cent.

(2) Gradual obstruction to urination 30 per cent.

(3) Variable and non-characteristic pains.

(4) Complete retention 40 per cent.

(5) Partial retention or none 60 per cent.

(6) Hematuria 18 per cent.

(7) 70 per cent of these patients show on rectal palpation, especially with a cystoscope in the

bladder, nodules or induration in the prostate which can be felt, and there is more or less fixity of the gland. The cancerous prostate may lose its sharp outline and blend with the surrounding structures. The median furrow in cancer is obliterated or partly so, and in lateral hypertrophy it is increased, either widened or deepened. The scirrhus type of prostatic carcinoma is especially malignant, and it is this type which is apt to produce metastases. Intra-vesical projection and ulceration are rare except late in the disease. and the rectum is rarely invaded by the cancer. Even the prostatic urethra may only ulcerate late, if at all. Stricture of the prostatic urethra is common late in the disease making cystoscopy difficult. Early in the disease the cystoscope shows a small median bar and perhaps some irregularity of the internal orifice. After the intra-vesicular space is invaded marked elevation of the trigone occurs. If there is no retention, and there is none in half of the cases, the patient generally first seeks relief for frequency or painful urination due to cystitis. Hematuria is more common in prostatic hypertrophy than in cancer, it may be initial or terminal or rarely total. Pain early in the disease is neither a characteristic nor a constant symptom. Late in the disease it is always present and often of a radiating character. The diagnosis of cancer of the prostate is not always easy, but it generally is, and the chief factor in making the diagnosis is the detection of one or more hard indurated areas in the gland of a man past fifty. Obliteration of the median furrow and extension of the disease to the intra-vesicular space should always be sought for in making the rectal examination as well as determining the fixity of the gland. An examination for metastasis should always be made. In inflammatory conditions of the prostate an indurated area may be found, but this subsides rapidly under appropriate treatment. Suspected carcinoma of the prostate should always have an X-ray examination to determine whether the hardness is due to a stone in the gland and not due to a cancer. *Treatment.* Geraghty says that in 95 per cent of the cases at Johns Hopkins hospital surgery alone is hopeless. He also says that in every case of cancer of the prostate operated upon because of retention distinct cancer tissue, apparently unchanged, can be found in some areas notwithstanding the amount of radiation previously employed. So at the present time he is removing the great mass of cancer by the perineal route and giving 600 to 1,000 mg. hours of radium through the wound. Hypertrophy of the prostate is not affected by radium. If the patient has cancer and hypertrophy combined causing retention, it is necessary to remove the obstruction surgically. Geraghty thinks radium cannot supplant surgery in cancer of the prostate, but it may greatly aid it. The application of radium to the prostate through the rectum and through the urethra alone has not been satisfactory, so needles are now being employed. 12.5 to 20 mg. radium needles are introduced into the carcinomatous prostate and left from 15 to 30 hours. Young's radical operation for cancer of the prostate removing the entire gland including its capsule and part of the membranous and the entire prostatic urethra together with the internal sphincter, the seminal vesicles and a portion of the trigone in one piece and anastamosing the bladder to the membranous urethra does not leave the patient incontinent and has resulted in a few cures.

Bladder. The first bladder tumor was diagnosed and operated upon by Corillard in 1639 through a lateral perineal cystotomy. Nitze, by his invention of the cystoscope, blazed the trail in the diagnosis of bladder tumors. But Civiale 50 years before that classified them as benign and malignant and referred to malignant degeneration of benign tumors. He distinguished between tumors of the bladder and tumors of the prostate. The most common benign tumor of the bladder is the papilloma, but all papillomata are potentially malignant. Rokitansky first pointed out the ease and frequency with which bladder papillomata become malignant. At the Necker clinic of 1042 urological patients 73 had bladder tumors, 56 malignant and 17 benign. In a recent report from Kummel's clinic of 83 bladder tumors 40 were benign, 43 malignant, 15 in women and 68 in men. At the Brady clinic 40 per cent of the bladder tumors are benign. The most common malignant tumor of the bladder is cancer. The predisposing factors in cancer of the bladder seem to be:

(1) A long standing chronic inflammation.

(2) Papillomata.

(3) Workers in aniline products.

(4) Leucoplakia.

Often it requires a careful histological examination to distinguish between a benign papilloma and a papillary carcinoma. Scirrhus carcinoma is much

less common than the papillary carcinoma. The scirrhus type is generally single, surface smooth or lobulated, base broad, tumor is hard and the bladder wall widely infiltrated. The signs of malignancy in bladder tumors which can be relied upon are (1) Ulceration, (2) Incrustations of lime salts, (3) Multiplicity of tumors and (4) Contracted bladder. Metastases in bladder tumors are rare and late. The symptoms of cancer of the bladder begin slowly and insidiously, and are (1) Urgency, (2) Frequency, (3) Terminal pain and hematuria. Hematuria is generally terminal and spontaneous and small in amount. It later becomes more frequent but never very abundant. It may be provoked by bladder exploration and may prevent cystoscopy. Later on ulceration appears, and the bleeding may be constant and the cardinal symptom. In fact blood in the urine, though only microscopic, is always like the red light on the street, a danger signal, and no drug or combination of drugs taken by the mouth ever influences a kidney or bladder hemorrhage in the least, and yet prescriptions are written every day for hematuria. Frequency and pain on urination are often associated with the hematuria. Sleep is disturbed. General health of the patient fails, he loses weight from the start. The appetite fails also. Death usually results in from one to three years. The diagnosis of tumor of the bladder is suggested by spontaneous terminal hematuria in an individual past 50. The papillary carcinoma bleeds early, the scirrhus bleeds only after it ulcerates. A sudden severe hemorrhage is rare in bladder carcinoma. The character of the hemorrhage varies. It may be initial, total, or terminal. Sometimes the first hemorrhage follows a violent exertion. Prostatic hypertrophy, stone and ulcer of the bladder also cause terminal hematuria. Varix of the neck of the bladder is supposed to do the same, but this condition does not exist except in pregnancy. At times particles of the tumor can be found in the urine. At times palpation of the tumor is possible. There is an indefinite and often indescribable sensation of weight or pressure in the bladder region, sometimes radiating into the sacrum or thighs, and this may be associated with a troublesome ardor and urgency. At times there is polyuria or pollakiuria. In malignant tumors of the bladder the tendency is for the urine to become alkaline early, to have a foul odor and to be very cloudy. If the tumor is located at the internal orifice partial retention can occur. Depending on the amount of impingement on the bladder capacity or on the degree of infiltration of the bladder wall, frequency up to the point of false incontinence may ensue. The diagnosis of bladder tumor is generally made by the cystoscope. It may fail in strictures of the urethra, in large irreducible hernia, in very large hydroceles, in a few cases of prostatic hydropy, where hemorrhage clouds the cystoscopic field or when the bladder becomes so contracted that it has no capacity. If cystoscopy cannot be performed, cysto-radiography has been used to demonstrate the presence of a bladder tumor. Prognosis: Benign and malign when applied to bladder tumors are purely relative terms, and it is well to remember that all benign papillomata are potentially malignant. Treatment: For the benign papilloma radium or the high-frequency current is much superior to surgery except for growths just above the internal orifice which cannot be reached by endovesical methods. For the papillary carcinoma radium applications or needles and for the scirrhus carcinoma radium or excision, or both, are the treatments employed at the present time.

Kidney. Prior to operation it is generally not possible to distinguish between a benign and malignant kidney tumor. Even after removal careful histological study may be required to establish the diagnosis. In 585 tumors of the kidney, 412 were in the adult, and 173 in children, especially young children. In 434 tumors of the kidney 65 were cancer, 74 sarcoma, 45 mixed, 218 hypernephroma, and 32 benign. Tumors of the kidney are rarely bilateral. In size they vary from a small nut to several pounds. They are more common in men than in women, four to one. One-half of all the tumors that develop in children under the age of sixteen are found in the kidney, and the symptoms of kidney tumor in a child and in an adult differ somewhat. In a child it is the tumor which dominates the clinical picture for a considerable time, and it is this which first attracts the parents attention. The big belly and the thin extremities of the child offer a striking contrast. While the abdominal veins are generally prominent, a symptomatic varicocele in a child is very rare. Hematuria in a child with kidney tumor is a rare and a late symptom. Fever, especially in children due to toxemia, is often associated with the renal tumor. It is somewhat less common in adults.

Death generally ensues in seven to eight months after the tumor is first discovered in the child.

Hematuria is the most constant sign of kidney cancer in adults, and when it occurs the cancer has already been in existence for a varying period. Neoplastic renal hematuria is always total. It is spontaneous, intermittent and in 70 per cent of the cases it is the first sign. It may precede a palpable tumor months or years. The amount of hemorrhage bears no relation to the size of the tumor. If the blood content of the urine varies considerable from one voiding to another or if there is one clear voiding between two bloody ones, it speaks for a tumor. Tumor bleedings are associated with renal albuminuria only in a minority of cases. Blood casts in the urine indicate a renal hemorrhage. Bleeding without any provocative cause, such as exercising or jarring, is indicative of tumor. Painless hematuria is often associated with a renal tumor. Violent renal colic with hematuria is rare in renal tumors. When it occurs in tumor cases clot casts of the ureter are found in the urine often after the colic. Many pus cells in the blood from renal tumors are the exception, and then generally a papilloma exists. Most mistakes in the diagnosis of renal tumors are made by misjudging the cause of the hemorrhage. Those cases are especially apt to lead to error where, after a hematuria, the urine is perfectly clear and apparently normal. The cause of the hemorrhage being ascribed to some imaginary and impossible factor such as exercise or cold. Sound kidneys do not bleed and "essential hematuria" is essentially nonsensical nomenclature. Masses of tumor in the urine are very rare but of great diagnostic value when found. The *second cardinal sign* in kidney tumor is the tumor itself. In 23 per cent of the cases it is the first sign. In 303 patients the tumor was present in 295 before death or operation. Neoplasms of the kidney are non-sensitive to pressure, feel hard, and are rarely associated with pyelitis. Fixity or mobility of the tumor is of very much less diagnostic than prognostic value. Pain in a kidney tumor is a valuable diagnostic and prognostic factor. It may be colicky when associated with clots, but otherwise it is a typical cancer pain, dull and constant, and having once begun it rarely ceases, when the nerves adjacent to the kidney are pressed upon by the mass the pain radiates. Pain in the shoulder of the affected side transmitted through a branch of the phrenic is present often enough to be inquired about. Often in the presence of kidney tumors there is considerable leucocytosis. Irregular intermittent or remittent fever is common. Metastases are very common. The diagnosis of a kidney tumor is somewhat facilitated by a comparison of the two kidney urines, the cancerous kidney generally secretes less urine than its associate organ, and this contains less of the excretory products, urea, etc., than its fellow. Pyelography is also another valuable diagnostic aid. Of course the earlier a nephrectomy is done in cancer of the kidney the better the prognosis, which is always grave. In nephrectomy for malignant diseases not only the kidney itself, but as much of the fatty capsule as possible and all involved lymph nodes should be removed. Cancer of the ureter is associated with cancer of the kidney at times and for this reason in doing nephrectomy for malignancy the ureter should be removed also. The average duration of life in cancer of the kidney is three to four years.

CARCINOMA CUTIS—A DIAGNOSTIC OUTLINE.

By Harry R. Foerster.

In a brief survey of the clinical diagnosis of cancer of the skin only the salient features of the commoner forms of the disease can be enumerated and only the more common diseases that come into play in a differential diagnosis can be discussed. A diagnosis from the dermatologic aspect should be based on careful study of the lesions and investigation of the history. Laboratory aid need be sought only in exceptional cases.

Epithelioma, by far the most common form of carcinoma cutis, is a primary epithelial neoplasm arising from either the epidermis or the epithelium of the cutaneous glandular structures, characterized by slow, destructive and invasive growth, occurring usually as a solitary lesion on the exposed parts of the body, especially the face, in individuals past middle age and developing most frequently from long present keratoses, warts or nevoid growths which have been subject to chronic irritation, or occurring on sites subject to traumatism and exposure, such as the nose, the lower lip, the canthae of the eyes, forehead, cheeks and hands. The transition from benign keratosis, wart or nevus to epithelioma is usually indicated by growth, central ulceration and marginal infiltration.

Of the two common types of epithelioma of the skin, the basal cell and squamous cell lesions, the former predominates, comprising more than 90 per cent of the cases. In lesions arising at the muco-cutaneous margins or on the visible mucous membranes, the squamous cell variety predominates and it is this type which is more rapid and destructive in development and gives rise to metastatic extension into regional lymph nodes. Epitheliomata may be further grouped into superficial, deep-seated and papillomatous types; the superficial may be keratotic, verrucous or nodular, the deep seated nodular or ulcerative. All show a tendency to early slow ulceration and peripheral extension with a characteristic infiltrated margin. The ulcer is covered by a loose, dirty crust which is easily removed by traumatism and soon replaced by the drying of a viscid, sero-sanguinous secretion. The ulcerated center becomes depressed while the margin shows a very solid, elevated rolled border, waxy or pearly in appearance, traversed by dilated blood vessels and non-inflammatory in character. From these early forms extensive destructive lesions develop, of which the crateriform, slowly advancing ulcers with ridgelike borders are usually of the basal cell type, and the deeply invasive and the papillomatous forms of squamous cell origin. Warty epitheliomata arising from arsenical keratoses or those caused by X-ray or radium are of the squamous cell variety.

Other forms of cutaneous cancer are *carcinoma lenticulare*, usually a secondary manifestation of mammary carcinoma, characterized by small, flat, pink, or brownish cutaneous papules or nodules; *carcinoma tuberosa*, a rare form of nodular cancer of scirrhus type, deep cutaneous and metastatic. *Carcinoma melanoticum*, usually multiple, arising from pigmented nevi and commonly mistaken for sarcoma; and *Paget's Disease*, a malignant papillary dermatitis usually arising in the epidermis of the nipple or breast. Included in a discussion of these lesions should be the various forms of sarcoma cutis, endothelioma and the lymphomata.

The differential diagnosis of epithelioma deals chiefly with syphilis, tuberculosis, the precancerous lesions and various benign neoplasms.

Syphilis. The late *nodulo-ulcerative* lesions of syphilis may be confused with epithelioma when occurring in the favored sites of epithelioma and when lacking their usual lentic characteristics such as serpiginous or crescentic configuration, discrete nodules and multiplicity of lesions. However, syphilis shows a more inflammatory character, more rapid growth, more pronounced ulceration and a softer advancing edge as well as a tendency to spontaneous healing with formation of pigmented scars. A *gumma* may be mistaken for an ulcerating epithelioma when the former shows unusual induration and limited ulceration. However, the induration in a gummatous lesion is more diffuse and more vascular, there is a lack of epithelial hyperplasia, and the gumma tends to necrotic involution.

A *chancre* is usually very rapid in growth, the infiltration is beneath the epidermis rather than in it, the ulceration is not pronounced and the regional lymph nodes are acutely enlarged and involved early. The history in these cases is, of course, of importance, as are the Wassermann test, microscopic tissue diagnosis and the therapeutic test for syphilis.

Lupus Vulgaris usually begins early in life, shows soft discrete, brownish nodules at the margins of the lesions rather than a firm rolled induration and shows as an only characteristic of epithelioma, a slow growth and a soft white scar. There should be no confusion on clinical examination but one must keep in mind that lupus vulgaris may undergo malignant degeneration.

Ulcerative tuberculosis usually shows a soft undermined margin, a quite purulent ulceration and vegetative granulations.

Blastomycosis shows a chronically inflammatory soft or papillomatous growth with many miliary abscesses in the pus of which the blastomycetes may be found. Confusion with papillomatous epithelioma is possible.

Discoid Lupus Erythematosus, Morphea, and Granuloma pyogenicum are infrequent and not difficult to rule out. Benign cystic epitheliomata, sarcoids, nevi, fibroid, fatty or lymphoid tumors and chronic granulations and ulcerations need not be discussed.

In conclusion: *Any chronic, slow growing keratosis, nodule or warty lesion occurring in an individual past middle life*, especially when on an exposed part of the body or in a locality subject to traumatism, *should be regarded with a suspicion of malignancy* if associated with a tendency to ulceration, infiltration, or increased rate of growth.

AN ENDOCRINE STAFF MEETING*.

BY A. A. SKEMP, M. D.,

LA CROSSE.

Most of you have at some time or other visited Medicalville. Not long ago I had occasion to spend a few hours in that interesting town and looked up an old classmate of mine, Dr. Pes who was practicing there.

Pes was not yet a staff member of the Endocrine Hospital, the only hospital in the town, but was to be voted on that night at the last meeting of the year and was to be called upon for a short discussion to serve, it seems, as his introduction to the staff.

We took a seat in the back of the room and before the meeting started I had an opportunity of learning the names of the leading spirits of the institution. Dr. Basedow, the president, was in the chair, and Dr. Myxoedema, the secretary was looking over the notes of the last meeting. In the front row were Dr. Graves, Dr. Hormotone, Dr. Langerhans, and Ed Interstitial the three former associated with Dr. Basedow in the so-called group practice, and Ed, the Orderly, omniscient, was there because, as Pes expressed it, he was expecting a good time. In the second row were Dr. Post and Dr. Anterior and Dr. P. Intermediate, these also representing one of the groups at the hospital, and Pes expressed considerable surprise at their presence, for he said it was quite exceptional to see any of the Pituitary group—that was their generic name—present when the Thyroid Clinic held forth, and he explained that Dr. Basedow and his men were generally known as "The Thyroid Crowd." In the third row there were but two physicians, one a pretty, dark haired creature—we could but see the profile of her compromising face from where we sat. She was Dr. Corpus Luteum and Pes said she was not feminine but neutral and a right good friend of all. Next to her sat the blasé young Dr. Jo Gonad who but recently had received much adverse comment as participant in a conventional triangle. It made Pes smile for he said that it was but one of a number that he had already found. In back of Dr. Luteum sat Dr. Sup Adrenal, Dr. Renal, Dr. Pancreas, and Dr. Addison, all general practitioners. Dr. Spleen sat alone on the opposite side of the room. He was a new arrival who aimed at a specialization and as yet was not entirely fixed. The Gland Brothers, Carotid and Pineal and their father, Dr. Gland, Pes Planus, and I completed the roster of physicians present.

The early routine of the evening was hurried through and within a few minutes Dr. Basedow was discussing the evening program. The plan was for everyone to say the things nearest to his heart without reservation, without fear of being personal or destructive; the only limitation being that everything said must have a direct bearing on the work of the hospital and men.

Dr. Basedow was first in the discussion. He was decidedly striking and forceful, seemed, indeed, energy personified. His prominent eyes, impetuous gesture, and constant restless activity were, Pes told me, characteristic of the man and it was often marveled about him that he kept up so well. His thesis concerned one of God's finest gifts to men, Time, and the efficient use of it. An exhortation indeed to all to awake from lethargy and indifference and to work. He spoke about the hours that were misspent in idle gossip and in efforts that were essentially unproductive; and then in colorful and inspiring words he laid before us the possibilities in rewards that would be ours if we worked *concertedly*, persistently, intelligently. Our bodies dominate our souls too often, he said; too often does the spirit suffer under the whip of physical comfort and luxury; rather let the body, a temporary structure, sacrifice itself to the nurturing of the soul so that its permanency of strength and beauty can be assured for eternity after the wreck of body is forgotten. Surely his philosophy found a concrete example in himself for when he finished, his soul seemed almost to step out from the occult and his wrecked frame, quivering, perspiring and limp indicated that the all too near future was to bury the lesser part of a big man, whose spirit was to go on and on.

He had no sooner sat down than Pes was on his feet. Poor old Pes! Five years ago he was a carefree lad, willingness personified. How he had aged! His face seemed that of an old man, and until the light of inspiration flashed into his eyes, as he arose to talk, his countenance was dull and meaningless. He said that he had come to the town of Medicalville unsophisticated in medical matters and ethics and with an over-eagerness to

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work, and that he had learned many things and would like to give a few of them, as his contribution, in thought and philosophy to the members here assembled. He spoke at length of the illogic, the inconsistencies, the palpable dishonesties of medical practice and made a whole hearted appeal for the correction of the faults that he clearly defined. He seemed irrefutable. He told how at any time of the day or night he could usher forth under great hardships, often forced to walk great distances in the snow and mud; and how for his labor, his diagnostic skill, his responsibilities, his worry, his anxiety, his loss of sleep and his sacrifice of health he would receive a mere pittance; how in fact he would be forced to rehearse the tribulation many times to acquire as much in return as the man would get for ten minutes' service over some innocuous appendage of some submissive patient. He was glad that he had the opportunity of addressing the staff and if the St. Endocrine Hospital saw fit to elect him to staff membership he would attempt to prove his worthiness of the high honor. Pes probably had visions of a fine motor car and a house on the boulevard when he lowered himself cautiously into his chair after the supreme effort. His talk was rather unfortunate, as Dr. Hormotone later expressed it, because he gave evidence of being reactionary, and I'm sad to relate he was not voted in.

When Pes sat down, Jo. Gonad stood up. It was an unusual reception he received in pantomine The Pituitary group looked blase. Dr. Spleen smiled; Dr. Thymus looked unusually animated. Sister Crania, the superintendent, frowned; old Dr. Basedow looked at him quizzically expecting, it seemed, an explanation concerning his latest escapade. There was none forthcoming. Dr. Jo—as he was more intimately known—smiled an ingratiating smile and expressed his endorsement of everything that my friend Pes said. He then set forth some ideas of his own. He said that the profession at large was too conservative and guilty of too many old fogyisms and prejudice, and if physicians would but tear themselves loose from traditions and the shackling influence exerted by the medical trust, there would be a vast stride forward. He told of his use of Loeffler's solution, of transplants, of intravenous injection of spermin, of Leydig's cells compound and of various other combinations and how, although his therapeutic activities were being frowned upon by some, his results would not suffer in comparison with the best the profession could afford. He then detailed his own personal experience. Ten years ago he was in death's throes, suffering from advanced tuberculosis. He then narrated in dramatic fashion his climb up hill, aided by the staunch mountaineers: Spermin, Loffler's intravenous compound, Leydeg Cell Compound, and so forth. "Look at me today," he grinned. As he sat down I imagined I could see St. Crania's lips moving in prayer for his soul.

Then up spoke Dr. Pituitary. It would take too much time to record all of the discourse of this eminent physician. He recounted his life history; how for a long time he practised in relative seclusion in the confines of Sella Turcica; how while he remained in oblivion and humbly pursued his course, the Thyroids were doing the most pernicious advertising. It was Basedow and Graves and Graves and Basedow for everything from an ingrown toe nail up, and from Alopecia down. But he was willing to make a prophecy that with Pars Intermediate's, and Pars Posterior's able assistance and with the influence he could exert on Dr. Adrenal and Dr. Luteum he would change the status of affairs. His eyes seemed to hurl molecules of internal secretion at Dr. Basedow, the chairman, but strange to relate they seemed thoroughly neutralized before any destructive impact could take place.

Dr. Luteum considered the allusion as a challenge for a rejoinder, but seemed rather indifferent. She did say, however, that she would like to have everyone feel that although she felt kindly toward Dr. Pituitary and his men, she thought a great deal of Dr. Basedow and felt that in cooperation with the thyroid group, and all groups in fact, that her life would reach its finest development. It seemed such a kind, impersonal, almost motherly speech that she received a warm round of applause.

Dr. Hormotone's talk, which was next was really the sensation of the evening. The poise that comes to the majority of men only in their late years seemed already to be his, although he was well under forty. He detailed his efforts of the past ten years to bring harmony into St. Endocrine; how he had gone about from man to man, from group to group, absorbing and dissecting the ideas they developed; how he had picked up enthusiasm, initiative and inspiration from Dr. Basedow and his group; how Dr. Pituitary had furnished concepts of a high order but how these, from either

design or accident, were diametrically opposed to everything emanating from the Thyroid crowd, and how this neutralizing effect made toward hospital stagnation rather than for the hospital progress that everyone so keenly desired. He also bemoaned the fact that although Drs. Adrenal and Luteum were making excellent contributions, their progress was opposed by Dr. Langerhans, for it seems that Adrenal's aggressiveness necessitated more activity on the part of Dr. Langerhans, who was decidedly opposed to any excessive activity. But Dr. Hormotone explained that if Langerhans, Sup Adrenal and Corpus Luteum would all work in harmony and in a spirit of cooperation there would be added to St. Endocrine hospital a high type of efficient metabolism, the value of which could scarcely be appraised. He had visited Dr. Spleen and Dr. Thymus and had found them more secretive than secretory and he had accomplished nothing in his interview with these reserved practitioners. Dr. Gland and his two boys, Pineal and Carotid, had been approached on numerous occasions but to offer any concrete exposition of their ideas or ideals, their relation to St. Endocrine, and their future aspirations was impossible at the present time. He felt, however, that these men had a storehouse of plans and in his analysis these were selfish and self-centered, and he could not see how St. Endocrine could profit in maintaining these men as staff members. His bitter invective of these men was, Pes assured me, not a bit overdrawn, but I felt rather uneasy myself when his speech had taken such a personal turn and felt much easier when he launched again into generalities. He spoke of the inherent differences in the attributes of men, the scheme of the Creator, he said, which can be either abused or used to wonderful advantage. He likened each individual to a stone of fine intrinsic merit, but alone detached and unaided, of little ability and rarely of striking power. But when a group of these are fashioned through love of service and idealism in professional concepts, they mold into a mosaic of irresistable charm and of inestimable value and force. He said he saw assembled talent which seemed conclusively expressive of God's designing goodness, and he felt that nothing of true merit would be impossible for the talent assembled if there were the proper inspiration and intelligent direction. He then faced Sr. Crania and Sr. Spinalis, who controlled the policies of the institution and he besought them to exhort, to demand the best physiological returns from everyone on the staff and he demanded them to blot out forever the spiritless and retarding influences that brought nothing but destructive criticism to the doors of St. Endocrine and took from the institution everything they could carry away without sacrificing their quasi sense of honesty.

After Dr. Hormotone's critical exposition, the anti-climax seemed in demand and Dr. Spleen, Dr. Addison, and Dr. Thymus could scarcely keep the attention of the audience and really I must confess that I have forgotten completely what they said and how they conducted themselves. But out of the mist of thought and criticism and inspiration in some instances hurled forth from staunch shoulders, in others feebly dropped from quivering lips, there seemed a realization of a new dawn appearing for St. Endocrine's. And when the last man had spoken an unbroken silence settled over all for a period of several minutes. It seemed like eternity. And I fancied standing there in that trance-like mist that hovered over the room, there were two forms, Achievement and Hope Incarnate, standing in the splendor of consumated victory over the forms of Intolerance and Indifference—feebly breathing wretches who were soon to die, and to be gone forever. It was a strange silence and until Myxoedema broke it with his motion to adjourn it seemed almost uncanny. Myx suggested further that such a soul-drenching ordeal ought to be ended in prayer and Dr. Basedow ordered him to pray and he prayed thus:

"Oh, Cortex Cerebri, thou receiver of all impressions and originator of all activities, take unto thyself from the infinite storehouse of the Creator of us all, those virtues which in us are found wanting, without which our efforts are so futile! Not for me, Oh Cortex, to describe these for you, for I know them only in their significance and their names seem only to whisper a tithe of what they stand for, Cooperation, Coordination, Unity of Effort and Competition in good done and not in dollars earned. Try, try always to keep these burning before us. Fire them by the spark of Godly service and let them grow by the inspiration of the masters of our profession. Help us all to approximate as nearly as we can to the ideal exemplified in Christ. Make us mutually helpful and give to me, Myxoedema, the strength to awaken

from my lethargy and to step up with the forward marching spirits of the hour." And the assembly breathed a quiet Amen.

THE VALUE OF RADIUM IN THE TREATMENT OF MALIGNANT NEOPLASMS.*

BY REGINALD H. JACKSON, M. D.,

MADISON.

We have seen in recent years, wonderful advances in the technical facility of major operative procedures. This permits of an ever increasing boldness and radicalism on the part of the progressive surgeon in his attack on malignant neoplasms wherever they may be situated in the body. Nevertheless I am under the impression that most of the surgeons who have carried their fair share of the burden are not entirely satisfied with their results but feel that in the long run the fight against malignant neoplasms by surgery alone is a disheartening one.

We can all point to many cases in which the boldness and thoroughness of our work has resulted in undoubted cures. We probably have in mind many other cases to which we cannot exactly point but which we are prone to think were cured although a proper follow-up system would doubtless show that many of these had terminated in recurrence or death by metastases. It is rather foolish to prophecy as to the technical limitations of the art of surgery, but it is fair to presume that the near limit has been reached as regards malignant neoplasms. Any further extension will be accompanied by a comparative increase in operative mortality which will offset any gains in respect to the percentage of cures. After all is said and done and I gainsay to no man a higher and more zealous love and admiration for the art and science of surgery than I feel myself; we must admit that applied surgery is not only in its application to malignant neoplasms, but also in many other conditions still largely a matter of last resort in that it is often only called upon to stem the tide of disease which is so far advanced that life is seriously threatened.

Remarkable are the results achieved by modern operative surgery as compared with the past, yet I do not think it heresy to raise the question whether at some future time our successors in the healing art will not look with amazement at the surgical operative records of the present time. When the proper solution of the goitre problem is attained it will no longer be a surgical one. It is at least conceivable that many of the inflammatory conditions due to pyogenic organisms which at present are brought to the operating table only after having reached the point where the accumulated products of inflammatory reactions are jeopardizing the patient's life, will be so handled and treated in their period of incipiency by appropriate methods, possibly radiant energy, sera, vaccines or other agents, that the use of the knife will not be so frequently necessary. I grant that these introductory remarks are, to say the least, visionary and far fetched and possibly ill become one who has devoted 24 years to the exclusive practice of surgery, but personally I feel that the great future advances in the art of healing will be not only evolutionary but revolutionary in that new methods and agents will be found which will largely displace the operative methods of today. It is in this spirit that we should approach the subject of the value of radium in the treatment of malignant neoplasms.

Inasmuch as the question of the therapeutic value of radium in the treatment of malignant disease has been more or less in the air since the pronouncement of John B. Deaver that radium was of little efficacy in this field, I shall not attempt solely through my own limited personal experience to contend that it is—but shall feel free to quote liberally from men of unquestioned experience and authority. The only way that its true value will be ascertained and measured is by the actual unbiased experience of men, especially surgeons, who have used it as a hand maiden of surgery and thus gained that indefinable judgment and understanding acquired only by mature experience, dependent upon the love of one's work.

When I first began to use radium as a therapeutic agent, I soon found that it was absolutely necessary to have at least an elementary knowledge of the why and wherefore of its action. I am frequently asked by physicians to explain in a simple way just why and how it produces its effects. As there may be some in the audience who are in the same quandary, I feel that at the expense of boring those who are familiar with the subject, it is fair to give a few moments to this aspect of it.

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*Read before the Wisconsin Surgical Association, Milwaukee, April 13, 1922.

CONSTRUCTION OF ATOM.

The present day conception of the internal structure of an atom, any and every atom, as being composed of a central nucleus or positive charge or charges of electric force about which are revolving or oscillating a variable number according to the element in question, of negatively charged particles of electric force or electrons is of course familiar to you.[1] The speed at which the electrons revolve or oscillate approximates the speed of light or 186,000 miles per second. Possibly we may best visualize the conception by its similarity to the solar system in that each atom has a central sun or positive nucleus and a system of planets or negatively charged electrons attendant upon it. The atom of a stable element is electrically neutral, the electrons being held by the attraction of the positive nucleus. Relative to their size the electrons are about as far from each other and the nucleus as the planets are from each other and the sun. Moreover, if we take the dimensions usually accepted for the electrons, there would be space in a single atom for ten million billion electrons, whereas the atom of Hydrogen, the lightest element, contains one electron, that of helium the next in weight, contains two, and so on up to lead which contains 82. Beyond this we come to radium with 88 and finally uramium the heaviest known element whose atoms each contain only 92 electrons so that even the heaviest atoms may be said to be very sparsely populated with electrons.

In atoms where the number of electrons become, comparatively speaking, quite numerous as in radium, polonium, actinium, uranium, etc., the electric equilibrium or neutral state becomes deranged and the atomic structure tends to rearrange itself as regards the number of electrons and positive charges on the nucleus. In this rearrangement the atom releases kinetic energy in that the surplus electrons and parts of the nucleus are hurled out of the system in much the same way as the earth would be hurled into space if the attraction of the sun were released. Briefly there are three effects of this rearrangement which interest us:

1. From the nucleus come positively charged particles which are hurled from the atom at a velocity of 12,000 miles per second, so-called alpha particles.

2. Beta particles which are the surplus electrons and which travel at 180,000 miles per second.

3. The gamma rays which are generated by the flight and impact of the beta particles and which are identical with the gamma ray of the X-ray.

The total number of alpha particles expelled per second from one grain of radium is about ten thousand million. Where the alpha particles strike a fluorescent substance like zinc sulphide they cause a luminous momentary spark. Sir Wm. Crookes devised a simple instrument called a spinthariscope consisting of a needle point dipped in a very weak radium solution which after drying was coated with zinc sulphide varnish. This being placed in the bottom of a metal tube with an adjustable magnifying eye piece enables one to see not of course the alpha particles themselves but the result of their impact on the zinc sulphide. The instrument which I hold in my hand contains only a penny's worth of radium and yet when ones retina is properly adjusted, the vision of these striking alpha particles is so wonderfully clear that it leaves little to be desired. As noted above there are quite a number of other elements which like radium are radio-active. Radium holds the field because of the slow rate at which the atoms disintegrate requiring roughly 2,000 years for complete disruption while others such as actinium and polonium last only a few years.

THERAPEUTIC EFFECTS OF RADIUM RAYS.

The therapeutic effects of the alpha particles are negligible as they are unable to pass through the glass or metal walls of the radium tube or needle containers. The beta particles are far more penetrating than the alpha and the changes produced in normal tissue by absorption of the beta rays are comparable to those attendant on direct cauterization, and burns from the first to the fourth degree, depending upon the duration and strength of the radiation, may readily be induced. As compared with direct cauterization, however, the changes, while occurring in orderly sequence, require from 14 to 20 days or longer before reaching the ulcerative stage.[2]

The penetrating power of the gamma rays is very great and complete absorption of the hardest gamma rays by the body tissues never occurs. This is not surprising when we know that these rays are produced with a voltage of one million as compared with 125,000 voltage of the highest powered X-ray machines. Time does not permit of any consideration of the various reactions of normal or

pathological cells to radium irridation or of the so-called selective reaction of certain types of cells beyond the brief statement that the effect of radium irradiation upon any living cell, if of sufficient intensity and duration, shows these clearly established phases:

1. Increase of cell activity, with associated proliferation.

2. Arrest of cell activity.

3. Degeneration and destruction of the cell.

The transition from one stage to another is simply one of degree depending on intensity of the stimulus.

4. All cells are more vulnerable to irradiation when in a state of active nuclear division. It is very probable that the effect on the cell is produced by changes in the chromaplasm of the cell nucleus.

5. The more embryonic in type the cell the more susceptible it is to the destructive effects of irradiation.

6. The higher the type of cell, the more resistant it is, thus irradiation of nerve cells is practically without effect.

7. A neoplastic malignant cell being a reversion to the embryonic type in that its nucleus is constantly in a state of divisional activity is especially susceptible to irradiation, as compared with a normal cell.[3]

8. As a general rule all parenchyma cells are to some degree susceptible to destruction from an irradiation which would result in a stimulation of the fibroblasts of the reticulum and thus result in a replacement fibrosis, similar to the changes noted in chronic interstitial nephritis where the parenchymatous renal cells, when destroyed by the toxins of disease, are replaced by fibrous tissue. Whenever a gap or loss of substances is produced in any part or organ of the body whether by excision, the use of the cautery, chemical or electrical stimuli, or the toxins of disease nature fills the space with fibrous or scar tissue.

9. It is upon the correct appreciation of these factors that successful radium therapy is largely dependent.

The ability of radium irradiation to destroy any and all malignant cells is established beyond equivocation. The problems which remain to be solved are:

1. Accessibility of the part involved to irradiation.

2. The establishment of definite rules of procedure as regards the most efficient dosage, filtration and cooperative aid of surgery and other agents.

3. The education of the public to the realization of the imperative necessity of seeking aid while the malignant condition is still of an incipient and primary character.

As regards accessibility, tremendous strides have been made since active surgeons have begun using radium in their work.

The radium specialist so-called, is and always will be greatly handicapped by his utter inability to gain approach to the deeper seated lesions. It is for the surgeon conversant with the therapeutic effects of radium to make use of this agent in his daily routine as the occasion arises. The boldness of surgical attack practically brings to the surface of the body so far as the application of radium is concerned, any deep seated organ. Probably the greatest recent advance in radium therapy has been the development of the direct application of radium in the form of buried needles directly in the diseased tissues.[4] It has been well said that the best filter for radium is a screen of malignant cells. In other words, instead of trying to radiate a mass of malignant cells at a variable distance below the skin by applying the radium to the skin, which is protected by filters of lead and aluminum, etc., to avoid the cauterizing effects of the beta rays, it is far more efficient to turn back a flap of skin and insert the necessary number of needles directly into the mass, thus gaining the benefit of crossfiring and also of less distance. This greatly increases the effect.

As regards dosage, the trend is best illustrated by stating that two years ago the treatment of cancer of the cervix uteri was to give three applications of 800 milligram hours, two weeks apart or 2400 milligram hours in all. Today far better results are obtained by giving 2400 mg. hrs. for the first application and if others are indicated to give another similar dose in two days and a third two days, later, or 7200 mg. hrs. in all. The idea at present both as regards cancer of the cervix and other malignant tumors, is to give a lethal dose in as short a time as possible, i.e., to destroy all the parenchymatous cells and then let the fibroblasts of the reticulum do their part in forming fibrous

or scar tissue. Other things being equal the relative malignancy of a given cancer is directly proportionate to the amount of fibrous tissue present. A so-called soft cancer consisting mainly of parenchyma cells is most malignant, whereas one with a large proportion of fibrous or scirrhous tissue is of much slower growth. In the latter instance the stimulation and growth of the fibroblasts of the reticulum is a direct expression of the resistance the body is making to the invading parenchyma or cancer cells and tends to limit the rapidity of their growth and dissemination. Any agent which like radium irradiation, will stimulate the fibroblasts will aid in this protective reaction. Under ideal conditions the proper irradiation dose would be one which would completely destroy the parenchyma cells and at the same time stimulate the fibroblasts. Two things are necessary to cure cancer:

1. Destruction of the cancer cells.
2. Blocking of the lymphatics.

That this ideal result has been frequently attained in the past is beyond question and it is reasonable to expect that an increasing percentage of such results will be obtained in the future with development of our knowledge and technique.

As regards the education of the public, equally great strides are being made.

I am astonished at the ever increasing percentage of people who come seeking relief from various forms of pre-epitheliomatous conditions and true epitheliomata of the face and other parts of the skin. If it is true, as stated by many authorities[5] —and from my own clinical experience I believe it is—that 95% of all forms of skin cancer can be cured by the application of radium and that the use of the knife is no longer justifiable in these conditions, it will not be long before the dreaded association of the word cancer with successive but often unsuccessful operations, will be dissipated to the extent that many will seek relief in the very earliest stages of other malignant conditions instead of putting off the dread hour until too late.

The element of time is a material factor in disease and in some conditions is the most controllable factor but unfortunately it is a factor which is too often neglected by both the laity and the profession. The philosopher Bergson believes that time is as essential an ingredient for instance in a chemical reaction as the amounts of matter entering into the combination. After all the other factors are present a relative amount of time must be added. So it is in a disease like acute fulminating appendicitis where the addition of 24 hours time often means perforation, peritonitis and death. Incipient carcinoma of the cervix uteri plus time equals hopeless involvement and metastases. In the latter instance the time element is not so much a matter of hours as of weeks or months but it has the same purport. In these cases as well as in certain others we know that the right thing done at the right time practically assures eradication of the disease, but knowledge is always many years ahead of practice.

RELATIVE VALUES OF IRRADIATION BY RADIUM AND X-RAY.

It is not possible nor pertinent in the brief compass of this paper to enumerate the advantages pro and con regarding these two agents. The gamma rays of each are identical from a physical and therapeutical standpoint. The question is rather one of adaptability in a given case and very frequently the cooperation of these agents gives more satisfactory results than either one alone.

Inasmuch as some definite positive presentation of achieved results is essential and desirable in order to fortify the claim that irradiation is of great value in the treatment of malignant disease, I have selected and I think the selection a fair one, a comparison of the relative values of irradiation and operation in carcinoma of the cervix uteri.

Personal opinion is often influenced by ones desires and I shall not refer to results as observed by myself to any extent beyond stating that I have not resorted to surgery in these cases for the past three years, being convinced that it is no longer justifiable and that while radium is not a specific or panacea, it is a far more humane method of treatment and offers better promise of

1. A cure.
2. Temporary relief.
3. Amelioration of symptoms.

To begin with, let us consider the group of hopelessly inoperable cases of this malady, cases which from the fearful wretchedness of the victim's state, make such pathetic but hopeless appeal to the surgeon's art. Bedridden, emaciated, cachetic, chained to an atmosphere of putrid, foul smelling discharge with frequent hemorrhages from the ulcerating and necrosing mass of cancer in the cervix and

vaginal vaults, a condition not only revolting to the patients but also to those who must attend to and live with them.

To those who are not personally familiar with the cleansing, palliative, remedial and in some instances undoubtedly curative effect of radium irradiation in these cases, any attempt to convince by descriptive language would be futile. Those who witness for the first time the almost miraculous results achieved in some of these cases after proper irradiation both as regard the remarkable changes effected in the local conditions in the space of a few weeks as evidenced by

1. Entire disappearance of the cancerous lesions from the cervix and vaginal vaults,
2. Cessation of foul discharge,
3. Control of hemorrhage,
4. Frequent cessation of pain,

as well as the corresponding improvement in general health, bodily vigor, activity, and sense of well being, must inevitably be stirred by the thought that radium irradiation in accomplishing this much in surgically inoperable cases justifies itself.

Of course there are many disappointments in this class and some instances where the irradiation seems to stimulate the activity and aggravate the symptoms of the disease, but the one outstanding fact is that certain of these cases have after irradiation made miraculous recoveries and have been free from all evidence of cancer for five years and are still well.

Statistics compiled by Janeway[6] of over 5,000 operations made by American and European surgeons for cancer of the cervix, including the radical Wertheim abdominal and the vaginal operations, show for the 5-year period a curative result of only 21%. These operations were made by surgeons of good repute and the cases were supposedly in the surgically operative curable class. Duncan[7] in a series of 128 inoperable cases treated by radium irradiation, reports 44% as clinically well although some of his cases have not as yet reached the 5-year period.

In cases which were operable, i.e., cases which it was feasible to operate but which were treated by radium irradiation instead, the percentage of his clinical cures in a smaller series was 86%. If, as has been demonstrated by numerous reputable and authoritative surgeons, it is possible to occasionally cure by radium irradiation a case of carcinoma of the cervix which is so far advanced clinically as to be classed as inoperable, it is reasonble to expect that the same treatment given to an incipient and localized lesion should result in a reasonably high percentage of cures. It is hardly fair to radium to bring only the inoperable and all the hopeless cases of cancer to it and because it fails in many cases, to condemn it. Just as there are inoperable cases so are there inirradiable cases and it is a great mistake to submit this latter group to treatment.

CONCLUSIONS

Radium irradiation has distinct value in the treatment of malignant neoplasms. Our collective experience to the present time does not warrant the statement that it is a cure for cancer in the sense that it is a specific, but sufficient authorative evidence has accumulated to justify the statement that it has cured and will continue to cure many cases of cancer and other malignant neoplasms.

It behooves us as surgeons to make use of this agent as a hand maiden of surgery, before, during and after operative procedures as well as without operative procedures when indicated.

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FAMILIAL BLADDER ATONY.

A family group in which bladder trouble is considered, by the male members at least, a part of the common heritage is described by F. F. Gundrum, Sacramento, California (*Journal A. M. A.*, Feb. 11, 1922). There are, in three generations, five persons who almost surely and four more who probably, were using a catheter to empty the bladder. They were all young when the trouble began—one man being only 30.

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EDITORIALS

LOUIS M. WARFIELD.

DR. WARFIELD'S host of medical friends in Wisconsin will be delighted to learn of the splendid recognition given him in his appointment to the Chair of Medicine at the University of Michigan, Ann Arbor.

In the comparative few years Dr. Warfield has practiced in Wisconsin, he has won the respect and admiration of the medical profession of the state. During this time he has been active in medical affairs, and has contributed unselfishly of his time for the advancement of medical progress in Wisconsin.

He has served as editor of this journal, as president of the Milwaukee Academy of Medicine, and is at this time vice-president of the State Medical Society of Wisconsin. The "Journal" expresses the regret of the entire profession in the loss of Dr. Warfield to Wisconsin, but congratulates him on this recognition and wishes him success in his new field.

WHAT OF THE FUTURE?

IT has been generally conceded that the anti-cancer campaign, intensively staged during the week ending November 2, 1921, was an excellent illustration of what can be done in presenting such a subject. That this work achieved a considerable measure of success was not mere chance. Rather it may be attributed to the patient and thorough laying of ground work over a period of eight years by some of the best medical minds in the country. Future projects against preventable diseases must likewise be prepared in a manner that will command attention and be assimilated.

Many believed that the cancer campaign was intended solely for the education of lay people. For this reason some physicians stood aloof. Other practitioners preferred to endanger the success of the movement by remaining in the background, lest their participation be interpreted as a selfish plea for patients. Of course, these views are untenable.

Primarily the anti-cancer campaign was intended to refresh the knowledge of the medical profession concerning certain elementary cancer facts. That relatively few men were equipped to establish the diagnosis of pre-cancerous conditions was fully realized. That others had forgotten or neglected to utilize the teachings of wise counsellors was likewise apparent. That still others were palpably indifferent to elementary warnings, too engrossed with other matters to educate their patients or simply negligent in their obvious duty of conducting painstaking examinations was plain. The steadily increasing death rate from cancer permitted of no other interpretation consequently, education of the physician was a prime consideration.

But, what of the future? Are the poignant les-

sons presented during the anti-cancer campaign to be forgotten? Are physicians going to neglect their roles as educators? Are pre-cancerous conditions to be overlooked until hope for cure has entirely faded? These are questions which each of the 2700 physicians in Wisconsin must searchingly ask.

The time has come for each physician to appraise his ability to diagnose, remove pre-cancerous conditions and conduct the prolonged post-operative constitutional treatment necessary to a material prolongation of life. It should be as an axiom that the greater the ease of diagnosis the less the possibility there is for a cure. This being true, the time for hurried, unskilled and unscientific examinations under unfavorable conditions, has passed. To fail to place a patient suffering with obscure symptoms in the hands of more skilled colleagues is to invite mutual disaster. To neglect the means of enhancing one's own diagnostic skill is manifestly dangerous. Wisconsin's cancer rate is steadily mounting. What of the future?

SMALLPOX.

VIRULENT smallpox was reported from Missouri following closely upon the Convention of the American Legion in Kansas City. The assumption is that a traveler from some distant state brought in an undetected case of the disease. Other cases developed and the sparks scattered; outbreaks of the severe form of smallpox were reported from Chicago and a number of other widely separated points.

For a number of years the wolf has stalked for the most part in sheep's clothing. Occasionally a severe case of smallpox has developed, but as a rule the disease has appeared in so mild a form that physicians have often had difficulty in recognizing it. As a result the public has almost forgotten its old dread of this historic scourge. This is well, so long as a feeling of undue security does not take its place; but unfortunately there has also resulted a tendency to neglect vaccination, and to enforce vaccination laws with laxity, if at all. Health officers, however, have never lost sight of the fact that any month might bring a flare-up of the former virulent type of smallpox, and they have realized better than anyone else how many people will pay the penalty if it once gets a good start again.

Dr. Force and Dr. Leake of the United States Public Health Service have recently demonstrated unmistakably, by setting up the statistics of the disease alongside of data on vaccination laws and their enforcement, "that smallpox is dependent on the popular vote." In general, they conclude, "the people obey the laws which they have made. If popular sentiment in a state is behind a strong, centralized compulsory vaccination act, smallpox is negligible in that state."

In the days of early American epidemics and early American journalism, Professor James Melvin Lee tells us that the publishers of newspapers disinfected their sheets before delivering them to the newsboys and post-riders. In the North, where smallpox was most feared, this was done wholesale by "smoking" them with the fumes of burning resinous wood. Would-be humorists sometimes suggested that the editor should confine his solicitude for the public to the disinfection of the contents, leaving each subscriber to smoke his own paper if he feared smallpox. Today the public spirited newspaper contributes effectively to the control of smallpox and other diseases by the more rational method of disseminating the facts and thereby stimulating intelligent citizens everywhere to protect themselves, their children and their community, to insist on the enforcement of the vaccination laws, and to back up the health officer who does his duty.

Experience proves vividly that if smallpox, even of a mild type, once gets a real grip on a community, it means the temporary stagnation of all business. Among other and better reasons for fighting it, *smallpox does not pay.*

AS OTHERS SEE US

Benjamin F. Bledsoe of California, judge of the United States District Court, makes some very pertinent statements concerning the doctor and the Eighteenth Amendment in the January 19th number of the *Bulletin of the Los Angeles County Medical Society*. They should be of interest to every physician and we are publishing them herewith:

"Doctors as a class are an ennobled lot. Unre-

servedly they have consecrated themselves to the highest form of service—service in alleviation of human misery and distress. The new life they usher in; the old life they perhaps prolong; to every life they afford comfort and hope. Whether they are the first reliance or the last resort, they come at our requset, prepared for any emergency, ready for any responsibility. The slender thread of life is committed unhesitatingly into their hands; to them we confidently expect the hidden to become the open book. In our anxiety their knowledge becomes an inspiration, their presence a benediction, their skillful ministrations the sure precursor of relief and rest.

But there are those who would turn these men into an organization of mere bartenders, and at that bartenders operating in defiance of law.

By Constitutional mandate, fortified by appropriate Congressional enactment, the use of intoxicating liquors for beverage purposes is absolutely prohibited throughout the United States. Their use for medicinal purposes, pursuant to appropriate regulations, is preserved. To any doctor who really believes that intoxicating liquors possess substantial therapeutic properties, the way is now open, and will probably always be open, in strict conformity to law, to make use of such instrumentalities.

But there is no law, no code of professional ethics, no necessitous condition of the human system and no possible or plausible excuse offering justification for a self-respecting physician to evade, circumvent and deliberately violate the law of the land by providing liquor for a person as a beverage when in truth he does not need it as a medicine.

The simple question now being propounded to the medical profession of America is this: Will you continue to minister to man's highest needs and thereby share his gratitude and his respect, or will you prostitute your high privileges and pander to his depraved appetite merely that you may get some of his ill spent money?"

THE PASSING OF THE COUNTRY DOCTOR

It cannot be said with anything but sorrow that the country doctor, as he has been known for a century or so in the United States, is passing. So acute has become the situation in reference to physicians in the rural districts, that in New England and New York State, communities are raising funds for subsidizing a physician's office and establishing the community doctor. But the day of the family doctor who, with his old horse—always an old and safe horse it was—rode the country side and brought into the world the babies and closed the eyes of the aged or the stricken, seems to have fled with the advancing years and become only a memory. Those doctors may not have porcelain tables and shining cases of instruments, and all the modern mechanics of medicine and surgery but they were blessed with a kindly sympathy which took the place of many pills and powders and was potent for confidence. Even in these modern days confidence is a great asset to a physician no matter how much he may know and how well versed in modern therapeutics and materia medica he may be. We owe something to James Whitcomb Riley, the poet of the simple rural life, in his Rubaiyat of Doc Sifers who had practiced "sence hain't no tellin' when"

In radius o' fifteen mile, all p'ints o' compass round
No man er woman, chick er child, er team, on top o' ground
But knows him—yet, and got respects and liking' fer him, too,
Fer all his so-to-speak dee-fects o' genius showin' through!

There were thousands and some are yet left, blessed be, of Doc Sifers'. They were more like community fixtures, perhaps, than pretentious of leadership in medicine. But they have love and respect and

'Mong all the women—mild er rough, splendiferous er plain,
Er them with sense, er not enough to come in out the rain—
Jes' every shape and build and style o' woman, fat er slim—
They all like Doc, and got a smile and pleasant word fer him!

And so he went splashing through the mud or rain, through the snow and never having an excuse why any call, be it uninviting and hazardous, should not be answered

To some pore sufferer's bedside o'anguish, don't you know!

It will be hard to get a subsidized doctor in the community who will take the place of the new young man who built himself into the hearts of

his people and lived and died with them. Sometimes they sent him to the legislature and other times he was mayor of the town, but he was no seeker for office—only a public spirit and a desire to do his part among those with whom he lived, moved him to accept the honors conferred. But we may say of the old family doctor as he rides along the Great Highway into a land where no mortal physician is needed

He's jes a child, that doctor is! And sir, I'd ruther see
That happy, childish face o' his, and pure simplicity
Than any shape or style or plan o' mortals otherwise—
With perfect faith in God and man a-shinin' in his eyes.—*Manitowoc Herald.*

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SPONTANEOUS PNEUMOTHORAX.*

BY ROBERT W. BLUMENTHAL, M. D.,

The subject of pneumothorax has been well studied by a number of earnest workers, and valuable contributions made to medical literature. Our interest will be centered upon the *spontaneous* type, in which no evident clinical cause can be found—known also as idiopathic pneumothorax, non-tuberculous pneumothorax, and by several other names. This variety occurs suddenly in healthy males (85-99%), between the ages of 20 and 40 years, terminating in recovery in from 6-8 weeks, without the formation of fluid. The right and left sides are affected with about equal frequency. The tendency of some writers to theoretically attribute the origin of *all* cases of pneumothorax to tuberculosis (suspected or unsuspected, recognized or unrecognized) is regrettable. The exciting cause is not definitely known, but strenuous exercise generally precedes the onset of the attack.

It was Huxley, who, in his "ORIGIN OF SPECIES" says, "When we do not know anything about the cause of phenomena, we call it spontaneous."

Several theories, as to the origin of this variety, have been advanced. The two most commonly accepted being, (1) tearing of pleural adhesions, permitting air to escape into the pleural cavity; (2) rupture of an emphysematous bleb or vesicle into the pleural cavity, in an otherwise healthy lung.

In about 80-90% of all cases of non-artificial or non-surgical pneumothorax, the affair is probably associated with pulmonary tuberculosis, and generally, in such tuberculous cases, the patient does *not* recover.

A study of Medical literature up to 1902, shows the number of reported cases of non-tubercular pneumothorax to be 56. This number was increased to 90 in 1912. It is, therefore, a relatively infrequent condition, but it may also be stated that on account of its benign course, cases undoubtedly escape detection.

Case Report.

White male, age 21 years, American, student, member of boat crew, always considered a healthy and active young man, habits good, denies venereal history, appendectomy in 1919, adenoids removed when a child, no loss of weight. Father, mother and one brother living and well. No history of cancer, tuberculosis, cardiac or renal disease.

Present illness began Nov. 16, 1921, with a complaint of pain in lower, left chest (anterior). Went to physician, who after examination, told patient he had a spot of pleurisy about the size of a dollar in the lower left chest (anterior). Under local heat treatment the pain subsided following day. On Nov. 19, 1921, he went to Chicago, having very little discomfort, but was short of wind. Nov. 22, 1921, he reported back to physician with severe pain in same location as previously—severe enough to confine him to bed in the hospital—felt like a knife cutting through chest from before backward, and from the side inward. Chest was strapped, and later a mustard plaster was applied, with relief. Remained in hospital (in and out of bed) for four days, until Nov. 26, 1921, when he was discharged, still having some distress. Nov. 28, 1921 (two days later) reported to physician a third time, on account of pain, especially upon exertion, and he also had to rest several times while walking up an incline to his classes. Treated with ice-bag to side. Fluroscopic examination, this day, revealed "air in chest cavity."

He came to Milwaukee November 29, 1921, and was examined at my office that afternoon. Examination showed a well developed young man, with flushed face, head and throat negative, dyspneic and apparently distressed after removing his clothing preparatory to ex-

*Presented before the Milwaukee Medical Society, Feb. 14, 1922.

amination. The left chest was larger than the right, and there was no movement with respiration on the left side, and lessened motion on the right side. The entire left side was tympanitic, while the right side was somewhat hyperresonant. Breath sounds absent over entire left chest (anterior and posterior), and instead a metallic tinkle is heard very distinctly. Coin test positive to left chest. No succussion. Right chest increased, clear breath sounds. Heart moved to right, apex beat seen, felt and auscultated in fifth intercostal space, to right of sternum. Abdomen not distended. Extremities negative. Reflexes normal. Blood pressure (S) 120, (D) 80, (P. P.) 40. Temperature 98.6; pulse 110; respirations 24. Diagnosis *pneumothorax* (left) without fluid.

Patient sent to Milwaukee Hospital and fluroscoped same afternoon. Entire left chest filled with air; diaphragm depressed; heart moved to right; lung moved to right and upward, back of sternum.

Patient put to bed and kept quiet. Following day temperature was 98.6, pulse 88, respirations 20. Urinalysis negative. Blood examination: red cells 5,500,000; white, 5,600, with nothing abnormal in differential; hemoglobin, 90%.

Fluroscopic examination and stereoscopic plates January 8, 1922, show a decrease of about 65% in air area on left side. Patient left the Hospital January 13, 1922, walking and "roaring to go".

Fluroscopic examination and stereoscopic plates on February 4, 1922, show a complete absence of air in left chest. Apex beat 7 centimeters to the left of the mid-sternal line, and 3 centimeters below the nipple level.

Chest measurements Feb. 11, 1922, at nipple level, expiration 79 c.m.; inspiration 87 c.m.; normal 82 c.m. Left side slightly larger than the right. Expansion 3 c.m. below nipple level: expiration 75 c.m. and inspiration 85 c.m.

Temperature during stay in hospital never exceeded 99 degrees; pulse between 70-86; respirations 18-20.

At no time during the course of the sickness was there cough or expectoration, also no fluid in the pleural cavity. The patient experienced absolutely no pain while at rest; had a normal appetite, and felt "fine" during his stay in the hospital.

Treatment consisted of *rest*, nourishing diet and fresh air, and later lung gymnastics by blowing water from one bottle to another.

Gray (Chicago) in a late article advocates the replacing of aspirated air, in pneumothorax, with physiological saline solution.

Nash (Surgeon to Bedford Co. Hospital, England) says, "As to the treatment adopted in this case (pneumothorax due to muscular exertion in a healthy lad), viz: tapping and aspirating the chest to draw off the air,—I doubt whether it was a wise procedure, as the air generally becomes absorbed in about one to two months."

PITYRIASIS ROSEA.

BY R. D. THOMPSON, M. D., and A. C. EDWARDS M. D.,

REEDSBURG, WISCONSIN.

Three typical cases of this rather uncommon skin disease have come under our observation and treatment within the past 2 months. Inasmuch as this affection is not frequent and that few are reported we are taking this opportunity of reporting them.

Some maintain that it is of a parasitic origin but up to the present time no specific organism has been isolated. It has been proven though that it has some feeble power of contagion. The cases coming under observation live from eight to twenty miles apart and as far as known have not come in contact with any other people similarly affected. No other cases have appeared from contact with patients now under treatment.

These three cases have come under our care within the last sixty days—the early Spring and Fall being the favorable seasons. Two of these cases were females—one, a brunette aged twenty-two, one a blonde aged ten. The third case was a young male, blonde type, aged nineteen years.

CASE No. 1. A. F., female, age ten, height 54 inches, weight 76. * * * attends country school. Has had whooping cough and measles. Since four years of age has had occasional attacks of sore throat * * * the last one being three months ago. One week ago mother noticed several pinkish red blotches over upper abdomen and chest. More appeared each day until her chest, neck, and upper thighs are quite covered. On examination the lesions are thickest over both infraclavicular spaces and upper abdomen. They are flat, oval, and range from ½ to 2 c.m. in diameter. The recent crop have an annular border, are pinkish in center and become reddish toward the periphy. The oldest lesions are distinctly salmon colored and are covered with a thin whitish-tan colored scale which can be readily rubbed off. The subjective symptoms in this case are nill, there being no itching or burning possibly due to the fact that her mother has been bathing her with a sodium bicarbonate solution. The physical examination of the patient was otherwise negative.

CASE No. 2. A. S., female, age 22, school teacher by occupation, past history negative. Physical examination reveals a large well developed girl, entirely negative, except for skin disease as found. Lesions are five days old and cover upper abdomen, chest, upper part of back. They are from one to three c.m. in diameter, superficially located, distinctly salmon in color, with a slighted elevated reddened border. The lesions are covered with a fine tannish colored scale which is readily removed. Some of the lesions are small macular in

type, while some become confluent and form lesions the size of a dollar. Subjectively there is pronounced itching and burning. No constitutional symptoms and no enlarged lymphnodes present. The lesions entirely disappeared in ten days under local application of Calamine Lotion and salicylates and sodium bicarnate, internally. Proteids and greasy foods were eliminated from the diet.

CASE No. 3. F. H., age 19, entered our office Jan. 31, for relief of a skin rash which had been present for two weeks. On examination, patient's abdomen, lower chest and back were covered with pinkish red lesions, ranging in size from a papule to the size of a half dollar. The lesions were oval in shape with their long axis parallel to the lines of cleavage. The larger lesions were covered in the center with a very fine brannish scale which was easily removed by friction. Physical examination of patient showed normal fauces, no enlarged lymph nodes, and was otherwise negative. There were very few subjective symptoms; what itching there was being more severe at night. Under Calamine Lotion and Salicylates, rash entirely disappeared within two weeks.

COMMENT.

These three cases almost identical with each other, all occurring at this time of the year, and with no relation to each other, are interesting from the standpoint of contagion. They are also interesting from a diagnostic standpoint in that skin diseases in general practice are as a rule not carefully studied—one of these cases being treated as Taenia Circinata—another case being diagnosed as Psoriasis, and pronounced incurable. We know that Pityrisas Rosea is a self limited disease, and usually runs its course in from two to six weeks. Whether or not the treatment prescribed was of material aid, cannot be definitely answered. Nevertheless, all three cases were completely cleared up within two weeks time.

THE RELATION OF HEART DISEASE AND PREGNANCY. SIR JAMES MACKENZIE. LANCET, 201:1163, London, June 4, 1921.

ABSTRACTED BY H. W. SHUTTER, M. D.,

MILWAUKEE.

No work in recent years covers this complex and interesting subject as thoroughly as Mackenzie's series of four articles. The normal circulatory changes of pregnancy, the mechanism of heart failure, organic disease and pregnancy, and cardiac arrhythmias appearing in pregnancy are considered in order.

Normally the heart shows no limitation of effort response before the sixth month of pregnancy. It is then seen on mild exertion. Due to the abdominal tumor an increase of from one to five inches in the circumference of the lower chest occurs between the seventh month and term. The left border of the heart is often found at term to be displaced as much as one inch outside the nipple line. The apex impulse is found in the fourth interspace. The author found no evidence of the so-called normal hypertrophy of the left ventricle. Venous stasis, manifested by engorged mammary veins, hemorrhoids and varicose veins, is often noted in normal pregnant women. Engorged veins in the neck indicate extra cardiac effort but are not of value in estimating efficiency. Oedema of the legs and cyanosis are frequently seen in healthy women. The majority of patients with abnormal circulatory signs pass through labor and the puerperium without trouble. This includes some cases of mitral stenosis.

The heart has two forces, the force at rest and the residual force (used in effort). Pregnancy gradually lowers the reserve force, shown for example by shortness of breath. This is due to four factors: The maintenance of the placental circulation, the extra weight to be carried, changes in the shape of the chest wall and the altered location of the heart.

Evidence of heart failure is not found in the heart alone. One must look to the manner in which the circulation is maintained, as shown by disturbed function. Contrary to the usual idea, dropsy and hepatic enlargement are found in but a limited percentage of heart failures. The respiratory organs and the heart itself show the most distinctive signs of cardiac failure. In the lungs, breathlessness is the most characteristic symptom. In the heart, pain of a definite type, in a definite location, and increased pulse rate while at rest, are early signs of impaired force. Dilatation of the right heart, noted not by increased breadth but by the altered apex beat, is of significance. This change in the character of the apex beat is due to its origin from the right instead of the left ventricle. With the patient in bed, persistent crepitation at the lung bases is the most important sign of impending failure of the heart. These crepitations are found in some women without heart disease. They are of importance when heart disease coexists. Normally they should disappear at once

on deep breathing. This pulmonary oedema indicates a decrease in the power of the right heart. Oedema of the legs in pregnancy is of significance only when coupled with evidence of dilitation of the right heart.

Systolic murmurs without other signs of cardiac impairment are not a bar to pregnancy. The author says that in watching hundreds of young women later bearing children, he has never had occasion to regret neglecting the systolic murmurs unaccompanied by other evidence of cardiac pathology. He has seen patients with loud, rasping systolic murmurs go twenty or thirty years after an attack of rehumatic fever, without showing signs of failure.

The estimation of the significance of a murmur is based on the functional efficiency, not on the murmur itself.

A systolic murmur does not interfere with pregnancy in a heart of normal size and rhythm (or in the presence of the respiratory type of arrhythmia). Size, rhythm and the response to effort give us the clue to the significance of mitral systolic murmurs.

Pregnancy may be allowed in an enlarged heart, even in the face of a history of rheumatic fever, provided the response to effort is good.

If the size of the heart is increased and the response to effort limited, the case requires careful consideration.

If the limited response to effort is not due to some temporary cause, then the heart muscle is damaged and pregnancy is not allowed.

In the absence of impaired function, extra systole and respiratory arrhythmias complicating mitral regurgitation do not preclude pregnancy.

Because of back pressure mitral stenosis carries an added risk in pregnancy. With the failure of the heart muscle the left auricle and both chambers of the right heart bear an extra burden. The lungs become congested, hence the importance of early detection of crepitation and dullness. In considering mitral stenosis and pregnancy Mackenzie says:

"When ten or fifteen years after the causative attack of rheumatic fever there is only a presystolic murmur and no sign of oedema of the lungs, pregnancy may be allowed, if the response to effort is good." If, in addition, a diastolic murmur is present, the heart is normal in size, not too excitable and responds fairly well to effort, pregnancy is allowed. In this case the mode of life is restricted.

Inefficiency (shown by breathlessness on slight exertion, rapid pulse or easily excited palpitation) in a mitral stenosis with a presystolic murmur only makes pregnancy dangerous.

Pregnancy is forbidden if the heart is large or irritable and effort produces breathlessness, even if there is no diastolic murmur. In the latter case if the woman is already pregnant she should be watched carefully for the onset of pulmonary oedema. If crepitation becomes persistent even after deep breathing, the advisability of inducing labor should be considered. Impaired percussion at the bases calls for interference.

Pure aortic stenosis is almost never seen in the young. The author's experience with aortic regurgitation is limited to two cases; both lived through labor but were dead in two years. Mackenzie is inclined to allow pregnancy in a young woman with aortic regurgitation if the heart is not enlarged, the effort response normal and in the absence of a 'Corrigan pulse." A systolic murmur at the base is not the sign of a damaged aorta.

The common cardiac irregularities seen in pregnancy are the respiratory irregularity, extra systole and auricular fibrillation. Respiratory arrhythmia due to vagus stimulation during expiration can readily be recognized when the patient breathes slowly. The pulse quickens in inspiration and retards in expiration. This condition has no significance in pregnancy. Extra systole due to a premature contraction of the ventricle was found in fifty per cent of pregnant women. In the absence of cardiac pathology it has no significance.

Auricular fibrillation is the form of cardiac irregularity commonly associated with heart failure in the child bearing period. Because of rapid rate, cardiac exhaustion develops soon if the heart cannot be slowed. The author has seen six cases of auricular fibrillation complicating pregnancy. He believes it to be common, however. These women all gave the history of rheumatic fever, all had mitral stenosis and all showed signs of failure as pregnancy advanced. Spontaneous labor occurred between the sixth and seventh month in five cases. All lived thru labor but none completely recovered health; five were dead in two years. Auricular fibrillation is a bar to pregnancy. While it is not immediately fatal, it has-

tens the issue. Careful observation is required if pregnancy already exists. Digitalis is indicated when the pulse is above eighty and is given until it falls to sixty or seventy beats per minute. Oedema of the lungs, orthopnoea and enlarged liver call for interruption of pregnancy.

Auricular flutter, a form of paroxysmal tachycardia, in the absence of other cardiac pathology is not a bar to pregnancy. The neurotic heart in no way contra-indicates pregnancy, in fact, pregnancy frequently relieves the condition. Pain over the left chest and down the arm, hyperalgesia, a soft systolic murmur and unimportant irregularities form a complex mistaken for heart disease. Overwork, toxaemias and sexual disturbances are the common causes of this condition.

Congenital defects of the heart per se do not contra-indicate pregnancy. Again, the effort test and circulatory efficiency are the deciding factors.

The early signs of cardiac distress in the child bearing period are breathlessness and palpitation. Pain as a symptom of failure is usually seen in slightly older people. Oedema of the lungs, cyanosis, enlargement of the liver and dropsy are signs of extreme heart failure. Women with heart disease, becoming pregnant, should be examined at least once weekly. Pregnancy is allowed to continue only as long as no signs of failure are observed. If breathlessness on slight exertion is noted, the patient is put in bed, preferably propped up. In these people deep breathing should be practiced several times daily. Frequent small meals relieve flatulence often seen in the presence of decompensation. Sleep must be obtained and be regular. In labor, anaesthesia and the use of forceps are advocated. Intervention should never be delayed when life is threatened.

PREVENTIVE MEDICINE

Edited by
W. D. STOVALL, Chairman
Section on Preventive Medicine, State Medical Society of Wisconsin

This Section is open to all members of the State Medical Society and others who wish to discuss subjects pertaining to Public Health. Original articles, and criticisms of statements appearing in this section are earnestly solicited. Questions concerning public health procedure will be answered. Address communications to Dr. W. D. Stovall, State Laboratory of Hygiene, Madison, Wis.

THE SHICK TEST.

The Schick test has been much talked about for the past few years. Everyone is more or less familiar with what the test is. There is, however, some misconception as to the general application of the test. For that reason a paper reviewing briefly the test and pointing out some of its advantages and limitations seems not to be out of place.

Schick, working in Von Pirquet's clinic in Vienna, discovered the value of the test, and therefore it has been called the Schick test. The similarity between this test and Von Pirquet's tuberculin test is apparent. The technique is much the same. It requires no special technique which is not easily acquired.

The test depends on the reaction of non-immunes to an injection of diphtheria toxin, the amount of which is a one-fiftieth minimum lethal dose for a 250 gm. guinea pig. Few are acquainted with the methods used to collect diphtheria toxin. A description of this method is given to point out the precision which is required in securing the proper amount to be used in each test.

DIPHTHERIA TOXIN.

Diphtheria toxin is a soluble poisonous substance which is produced by the diphtheria bacillus as it grows in an appropriate fluid media. The toxin is very potent. The toxin accumulates in the media as the organism grows. By the end of the sixth or seventh day of growth usually one one-hundredth of a cubic centimeter of the media will produce death in a 250 gm. guinea pig. The media itself contains meat extracts and other protein substances.

STANDARDIZING TOXIN.

After the toxin has accumulated in the media the bacteria are removed by passing the liquid through a filter which holds back the bacteria. This results in a clear bacteria free liquid which besides the meat extracts which compose the media contains also the diphtheria toxin. It is necessary to determine the toxicity of the fluid. This is accomplished by giving varying amounts of the fluid to a number of guinea pigs. When a successful culture has been obtained, it is found that one-fiftieth to one-hundredth of a cubic centimeter of the fluid will produce the death of the guinea pig within two to four days. The smallest amount which kills the pig in four days is called the minimum lethal dose.

DOSE IN SCHICK TEST.

For the Schick test one-fiftieth of the minimum lethal dose is used for each injection. Because of the high toxicity of the toxin the dose given is extremely small. The proper amount can only be reached by a dilution method.

If the toxin has a minimum lethal dose of one-sixtieth cubic centimeter and if it is desired to give two-tenths of a cubic centimeter in each injection then it is necessary to dilute one cubic centimeter of the toxin five hundred times.

This dilution can be easily reached by making two dilutions: primary and secondary dilutions. The primary dilution is made by adding one cubic centimeter of the undiluted toxin to five cubic centimeter of normal salt solution. The secondary or final dilution is made by adding one cubic centimeter of the primary dilution to ninety-nine cubic centimeters of normal salt solution.

The secondary dilution is the one used for the test, and is found to contain one-fiftieth of the minimum lethal dose in each two-tenths of a cubic centimeter.

STABILITY OF TOXIN.

Diphtheria toxin loses its potency very rapidly when exposed to even room temperature and light. It must be kept in a cool dark place. The primary dilution if kept cool and protected from light will retain its potency about ten days. The secondary dilution loses its potency very fast and is not good after ten to twelve hours. The secondary dilution should not be made until it is desired to give the test.

TECHNIQUE OF TEST.

The materials required to carry out the test are diphtheria toxin, a one c.c. hypodermic syringe graduated into tenths, a very fine needle, 27 gauge, and sterile normal salt solution. It is found convenient to use two-tenths of a cubic centimeter for each injection as it makes a good size bleb.

The injections are made into the skin and not subcutaneous. This is easily accomplished if a small bit of the skin is held tightly between the thumb and forefinger of one hand and the barrel of the syringe in the other is held lower than the point of the needle. Another convenient method is to grasp the arm so as to pull the skin tight over the flexor surface of the forearm and insert the needle into the skin. Two inoculations are required, one in the right arm and one in the left. The test itself is applied in the right arm. The control test, which is an injection of some of the same material used for the test which has been heated to 75° C. for ten minutes, is applied in the left arm. The surface through which the injection is to be made is cleaned with alcohol.

REACTIONS.

The reaction, if positive, is shown by an area of inflammation varying in extent from two to five centimeters. It is more intense in the center and endures for about ten days or two weeks, when it gradually disappears, leaving a brown desquamating surface. Those giving such a reaction are susceptible to diphtheria.

If the diphtheria toxin could be isolated from the meat extracts and other proteins which compose the media then identifying the Schick reaction would be a simple matter. Any reaction would be a Schick reaction. This, however, is not the case. The media in which the diphtheria bacillus is grown, and therefore the fluid in which the toxin is produced and collected contains various sorts of protein compounds. The bacteria themselves as said above can be separated but the diphtheria toxin cannot be separated from the protein contained in the media in which the toxin is collected. There are some individuals who are sensitive to these protein substances. Such individuals show an area of redness and swelling around the point of inoculation as a result of their sensitiveness to these proteins. This reaction, while it may be confused with the reaction to the diphtheria toxin, Schick's test, is entirely independent of that reaction. We are therefore confronted with the necessity of distinguishing between the true Schick reaction and the false or protein reaction. The false reaction is called a pseudo reaction. It is obvious that an individual may be both susceptible to diphtheria toxin and sensitive to the protein of the meat extract. In such a case both the pseudo reaction and the Schick test will show. It is difficult, if not impossible, to distinguish at times the two reactions. It is for this reason that the control test is required. The control test depends upon the absence of diphtheria toxin. The diphtheria toxin is destroyed by heating the material to 75° C. for ten minutes. A reaction in the arm on which the test has been applied and no reaction on the arm in which the control test has been applied indicates a sensitiveness

to the diphtheria toxin, a positive Schick reaction.

It is obvious that an individual may give no reaction, may give a positive reaction to the diphtheria toxin, a positive reaction to the proteins, or a positive reaction to both the diphtheria toxin and the proteins. For the sake of convenience, Dr. Zingher has suggested that these reactions be read as: (a) No reaction, negative; (b) Reaction to the diphtheria toxin, positive; (c) Reaction to other proteins, pseudo-negative; and (d) Reaction to both the diphtheria toxin and other proteins, combined positive.

APPLICATION OF TEST.

The Schick test per se has nothing to do with preventing diphtheria. It demonstrates those who are susceptible to diphtheria and those who are not. The non susceptible individuals show no reaction because of the antitoxin in the fluids which bathe the body cells. This antitoxin neutralizes the toxin used in the Schick test and as a result no irritation takes place and no reaction occurs. An individual having enough antitoxin in the body juices to prevent a Schick test reaction has enough to protect against diphtheria. The accuracy of the test depends upon the accuracy which is used in making up the dose and in making the injection.

Park and others have shown that the most susceptible period in life to diphtheria is between the ages of one and six years. Children under six months are not often susceptible. After six years a few less are susceptible every year up to adolescence when the largest number of non-susceptibles is found. It is obvious that the diphtheria problem lies with the pre-school and school children. Since a very high per cent, 80%, of children between one and six years are known to be susceptible to diphtheria and therefore will give a positive Schick, it seems unnecessary to bother them with an annoying and time consuming test which will in no wise assist in establishing immunity. For this reason it is recommended for children up to six years of age that toxin-antitoxin mixture be used without reference to the Schick test. This facilitates matters considerable, making it much easier for the private physician than if it were advisable to use the Schick test.

After six years of age there are a larger number who will not require immunization. A larger per cent of the older children are sensitive to the other proteins in the fluid injected. A very high degree of sensitiveness to the other proteins is indicated by large pseudo or combined positive reaction and indicates that the use of toxin-antitoxin mixture is likely to result in a rather marked inflammatory reaction.

PRIVATE PRACTICE AND THE SCHICK TEST.

The man in private practice will find the Schick test very inconvenient. He will seldom be able to use it and if he can he will not want to. After the test is applied the physician must either call or have the patient call at his office at least twice in order to make a proper reading. Furthermore, the physician in private practice is seldom called until some one in the family is sick. In a family where there is a case of diphtheria it is necessary to use means that will give immediate protection to other members of the family. It frequently happens that the reaction of the Schick test can not be definitely determined under four days. Such a delay nullifies the small benefit which might be derived by using the test. There are other reasons why this test is not practical for private practice. Chief among these reasons is the unstable character of the toxin. A good deal of the toxin distributed for the Schick test has lost its potency because of improper storage. The result of tests made with such toxin is unreliable and misleading.

Toxin-antitoxin also requires considerable time, six to twelve weeks, to produce immunity, and for that reason is not applicable during an epidemic or in a family where the disease has already occurred. It is, however, applicable in private practice. It is administered as any other hypodermic injection. It can be done in the office or in the home of the patient. The patient does not require medical attention between doses. Every physician should recommend to the families under his care that all children under six years of age be immunized against diphtheria with toxin-antitoxin mixture.

The above discussion has been confined to the limitations of the Schick test. The test has some distinct uses as a measure for diphtheria control. The test has its greatest usefulness in the hands of public health officers who are familiar with it. It can best be used in cases where large numbers are being tested at one time and the results of the test determined by one who is accustomed to reading the test. The three chief uses of the test may be enumerated as follows:

1st. To determine the immunes in schools where the non-immune children will receive the immunizing doses of toxin-antitoxin.

2nd. As a test to be used after three doses of toxin-antitoxin have been given to determine whether or not immunity has been produced.

3rd. To determine the susceptibles in an institution where large numbers of children have been exposed to diphtheria. In such a case the result of the test has economic importance since the immunes will not require a prophylactic dose of antitoxin.

PUBLIC HEALTH NEWS ITEMS

The usual exclusion period (for school attendance) in cases of chickenpox is from two to three weeks, or until complete recovery of patient. There is no stated period for placarding such homes or for excluding children in such homes from school.

The period of exclusion from school for scarlet fever is governed by the date of onset of the disease, not by the time when the quarantine is removed.

The state law imposes a heavy fine for knowingly exposing another to a dangerous communicable disease, but does not hold such offender criminally liable for homicide.

In whooping cough it is not sufficient for public protection to require wearing of an armband of a particular color by a victim of the disease. The child must remain at home and the house be placarded.

When a health officer, who is acting as collaborating epidemiologist (federal) at $1 per year, resigns or is not reappointed, his authority to use the frank is revoked and a new health officer must be appointed.

A deputy state health officer and the county nurse examined 400 school children at Rib Lake for follicular conjunctivitis, finding many cases (estimated at 35%). Arrangements for treatment by oculists are pending.

Health officers who attend the biennial conference of health officers in Madison (set for Aug 14th to 18th) are to be reimbursed for expenses by the town, village or city concerned, the items including railroad fare and hotel bills.

The Bureau of Nursing Education announced examinations for registered nurse certificates to be held at Milwaukee and Eau Claire on June 13, 14 and 15.

Children in the home with an influenza patient may attend school if the patient is kept isolated.

Miss Mary Regan has been chosen to be county nurse by La Crosse County. She succeeds Miss Elsie Burckhart, resigned.

Miss Sophie Paulus, formerly Industrial Nurse with the Eastman Kodak Company, was recently chosen to be County Nurse by Crawford County.

Mrs. Josephine Gerry was appointed County Nurse for Iron County, succeeding Marie Kierman, resigned. Miss Annie Low, formerly Community Nurse in Monroe, has been appointed County Nurse for Green County, succeeding Miss Johanna Schwarte, resigned.

"Mrs. Jennie Baramore, proprietor of a rooming house in Chicago was recently quarantined when it was found that she harbored typhoid bacilli. She brought habeas corpus proceedings against Dr. John Dill Robertson on the grounds that the authorities had no right to quarantine her but the supreme court ordered that she be removed to quarantine." J. A. M. A., March 18, 1922.

In a statement issued by the public health committee of the New York Academy of Medicine, March 8th, it is announced that the experiment of prophylactic inoculation against pneumonia carried out during the period of the war and subsequently have not thus far yielded sufficiently convincing proof of its efficiency to warrant universal application. The experiments have, however, established that the vaccines have some value against three of the fixed bacteriological types of lobar pneumonia and that vaccinations do no harm. There have been no fatal results from them but the duration of immunity secured is not very long.

The State Laboratory has ready for distribution a vaccine made of the three types of pneumococci.

Directions for the use of the vaccine are sent with each package.

The State Laboratory of Hygiene is making for distribution a pertussis vaccine. Full directions for the use of the vaccine accompany each package. The laboratory is anxious to have the physicians of the State make use of this vaccine. Requests for this vaccine should state how many doses are required.

"CAMP ROOSEVELT—BUILDING BETTER BOYS."

Physicians and nurses realize that while the body may be physically sound, to make a good wholesome, 100% American a sound mind is equally requisite. Training for physical perfection, allied with proper development of all faculties, makes a thoroughbred of the average man.

"Directed work, directed play, directed recreation, all done in a way that lets a boy develop his own initiative and his own faculties for any of these three," is the way Major F. L. Beals explains the way boys are trained at Camp Roosevelt, that national educational-training encampment known as the "Boy-Builder" located near La-Porte, Indiana. Here for a period of six weeks of intensive play and study, boys spend a happy, carefree life out in the open, close to nature, all the while receiving instruction in the principles of Democracy, in the meaning of patriotism and loyalty to country and flag, and in self-reliance, initiative and leadership.

Camp Roosevelt is the only boys' camp coming under the auspices of a board of education. It is the only philanthropic organization, catering to all American lads who are clean-cut and wholesome, and not to a select few. It is made possible by the assistance and co-operation of such organizations as the American Red Cross, the U. S. War Department, the Y. M. C. A., the Winchester Junior Rifle Corp, and public-spirited Chicago citizens who yearly contribute the necessary funds to maintain this worthy project.

A splendid program is operated, including all of the outdoor sports indulged in by the American boy—military instruction, physical exercises, basketball, baseball, swimming, target practice, and other sports. In the evening, the entertainment includes movies, stunt nights by the companies, lectures by well known business men, and campfires. This is the province of the welfare organizations.

The camp is divided into three sections: The summer school division, the R. O. T. C., or military division, and the Junior camp for younger boys. Boys may attend their course, and thereby not only enjoy their instruction, but derive a maximum of benefit from it. The season is of six weeks' duration, divided into two periods of three weeks each. A boy may attend either one or both of these periods.

Major Beals, commandant of the camp, occupies, during the winter months, the position of Professor of Military Science and Tactics and Supervisor of Physical Education in the Chicago public schools. His office is at 460 S. State St., where full particulars regarding the camp may be obtained.

FIGURES NEVER LIE—BUT FIGURES DO.

Those practitioners of the healing art who maintain that all pathologic conditions, from cancer to chilblains and from soft corns to hardening of the liver, are due to sublaxated vertebrae impinging on spinal nerves are republishing their annual batch of "statistics" on the chiropractic treatment of influenza. The standard advertisement runs, in part, as follows:

The following statistics of the 1918 "Flu" epidemic are respectfully submitted:

One of every 16 patients died under medical treatments.

One of every 127 patients died under osteopathic treatments.

One of every 513 patients died under Christian Science treatments.

One of every 886 patients died under Chiropractic adjustments.

These figures, of course, are evolved from the inner consciousness of those gentlemen that furnish verbal ammunition for chiropractic advertising campaigns. But, even assuming them to be correct, just what do they prove? They prove that many more people die when under the care of a physician than die when under the care of an osteopath, a Christian science practitioner or a chiropractor. The medical profession is perfectly willing to admit this; it is equally willing to admit that the vast majority of those who die, die in bed. Neither of these somewhat self-evident propositions, however, argues that scientific medicine is more dangerous than chiropractic, "Christian Science" or osteopathy, or that a bed is a dangerous place. They do prove that most people who are sick enough to be in danger of death are usually in bed and under the care of a physician. Any one who is familiar with the facts may admit that comparatively few people die while directly under "chiropractic adjustment" or any other of the fad "treatments." There are two outstanding reasons for this. The first is that the man who relies, for example, on chiropractic for the relief of some passing indisposition precipitately deserts this cult when he realizes that he is dangerously ill. Then he calls in a physician; should he die, he dies under "orthodox medical treatment.' The second reason is that, should a patient die under "chiropractic adjustment," the law would require an inquest, as in very few states in the Union are these gentry permitted to sign death certificates. It is notorious that when the "patient" of a chiropractor becomes dangerously ill, the chiropractor urges the family to call in a physician!—*Jour. A. M. A.*, March 11, 1922.

REPORT OF COMMITTEE OF BOARD OF TRUSTEES AND JUDICIAL COUNCIL ON CIRCULAR ISSUED BY "MEDICAL ADVISORY COMMITTEE."

(At its meeting held at the Association headquarters, February 2, the Judicial Council considered, among other matters, a printed letter recently circulated widely by a "Medical Advisory Committee." This letter was specifically addressed to the secretaries of component societies of the American Medical Association; with it were a preamble and resolutions which these societies were asked to adopt. The Council deemed it advisable to discuss the matter with the Board of Trustees, since that body also was in session. The Council presented the matter to the Board, pointing out that even though the matter emanated from a committee whose origin and membership had not been revealed, the communication had been considered by a few component societies as semiofficial in character and acted on as such, and recommended that an official statement be published. After due consideration, a committee, consisting of the chairman and secretary of the Board of Trustees and of the Judicial Council, respectively, was appointed to formulate a brief statement for publication in THE JOURNAL. The statement follows.—ED.)

STATEMENT OF THE COMMITTEE.

Recently there has been circulated an open letter signed by a "Medical Advisory Committee" and addressed to the component county societies of the American Medical Association. This letter with its accompanying preamble and resolutions was published in THE JOURNAL, Jan. 21, 1922, page 198, together with correspondence relating to the subject. The circular presents six postulates:

The public and the profession are being sold out to:

1. Foundation control of "full-time" medical education.

2. Lay board domination and the "closed shop" hospital.

3. Socialized state medicine, subsidized community health centers and hospitals under political or university control.

4. Legislative dictation of therapy and fees.

5. Demoralization of medical standards by the expansion of cults.

6. Exploitation of the specialties by lay technicians.

These postulates call attention to certain conditions, existing and anticipated, some of which are detrimental to the public welfare and a menace to the practice of medicine, and it is charged at the same time that the existence of these conditions is due to "so-called leaders" in the Association. A method for correcting the evil is suggested, namely: The instruction of the representatives to the House of Delegates of the American Medical Association to support three specifically named propositions:

A. A change of policy and leadership in the A. M. A. pledged to the immediate abolition of the evils mentioned, and constructive protection of medical interests.

B. The repeal of multiple representation and plural voting privilege by section delegates.

C. The election of Trustees for a period of two years; five Trustees to be elected one year, and four the next, to prevent the Trustees from perpetuating oligarchical rule.

Had this "Medical Advisory Committee" called attention to the conditions without exaggeration and made constructive suggestions for combating them, it would have deserved praise. But harm, not good, lies in the manner in which the subject is presented and in the unwarranted accusations made in the body of the letter against the Board of Trustees and the officers of the Association. The tendency of this communication is to breed discontent, suspicion and disloyalty at a time when there is great need of calm, deliberate consideration of how best to check certain dangerous tendencies affecting the practice of medicine and to remedy serious conditions that already exist.

The charge that the House of Delegates, the Board of Trustees or that the leaders of the Association have promoted or in any way fostered the conditions named is submitted without evidence and is without foundation.

The officers, the Trustees of the Association, the various Councils and a majority in the House of Delegates are aware of the conditions referred to in the postulates. Some of these conditions primarily require correction by local and state medical organizations, the national association cooperating.

Inferentially at least, the Board of Trustees is the body that is held blamable for the alleged sins of omission and commission, since one of the remedies proposed is shortening the term of office of the members of the Board, disregarding the fact that consideration of the problems presented by the six postulates falls primarily within the jurisdiction of the House of Delegates, not of the Board of Trustees, and that it is the function of the various councils and committees, having jurisdiction, to carry out the specific policies formulated by the House. These councils and committees are directly responsible to the House of Delegates, not to the Board of Trustees.

The question of the election of delegates by the Sections is one which must be decided by the House of Delegates itself. Such representation has been in existence since the reorganization of the Association, and it is presumed that good reasons existed for providing it. The charge that these delegates have acted as an organized bloc against the best interests of the profession demands incontrovertible proof.

The communication, both in language and in spirit, is destructive in character. What is needed are well-thought-out suggestions as to the best method of combating the evils that threaten public and professional welfare and which will tend to build up and not to destroy. The undersigned committee recommends to the

members of component county societies that they give careful study to the whole proposition before adopting any resolutions or making any recommendations to the House of Delegates of their state associations. It is earnestly recommended that the House of Delegates of each state association select as representatives to the House of Delegates of the American Medical Association men who have given thoughtful consideration to these subjects and who have primarily at heart the best interests of the public and of the medical profession. It is believed that the efforts of organized medicine will be successful in the correction of evils which threaten the economic status of the medical profession and the welfare of the public in proportion to the general ethical standards which the members of the profession follow in their own professional and social relationships.

W. T. Sarles, Chairman, Board of Trustees.
Frank Billings, Secretary, Board of Trustees.
M. L. Harris, Chairman, Judicial Council.
A. R. Craig, Secretary, Judicial Council.

THE PURPOSE OF THE GALLBLADDER.

The explanation for the existence of the gallbladder has aroused as much discussion as the futility of the appendix or the utility of the thymus. The value of the gallbladder as a lucrative stone quarry for the artisan surgeon is admitted by all; but when the triumphant operator has removed it, life and gall seem to flow on as if the offending member had never had any function but that of lithogenesis. Comparative anatomy, which helps to clear up so many puzzles, here only serves to baffle, for some animals are entirely devoid of a gall bladder and yet thrive apparently as well as those more liberally endowed. Thus, McMaster relates that among the higher animals it is present in the cow and sheep, while it is absent in the horse, present in the goat, and absent in the closely related deer, and is to be found in the hog and wild boar but not in the peccary of South America. Among birds, the hawk and owl possess it, while doves do not; and among the rodents the mouse is found with the organ, the rat without. One species of gopher, the pocket gopher, is without a gallbladder, while another, the striped gopher, possesses it. Woods Hutchinson is authority for the statement that in the giraffe it is at times present and again not.

Careful studies in the Rockefeller Institute have indicated clearly enough that when there is a gallbladder it works as vigorously as if it had a purpose in life, concentrating at a remarkable rate the bile that reaches it, for the mere passage of bile through the gallbladder from the cystic duct was found to concentrate it from two to four times, while the bile that enters the intact gallbladder may be concentrated ten times in twenty-four hours. Such power of concentration makes it possible for the gallbladder to serve as a storage place for bile despite its relatively small capacity, although at the same time the concentration favors the precepitation of the least soluble component of the bile, the cholesterol, and undoubtedly this explains the frequency of gallstones. On the other hand, the demonstration of this concentrating ability of the gallbladder fails to explain its functional value entirely, since we have before us the apparent good health of those who have been robbed of this organ, and the manifest good health of those species of animals that have no gallbladder. Certainly it cannot be a matter of different needs because of dietary differences, when the mouse has a gallbladder (and gallstones too) and the rat gets along so well without either.

There is the possibility that when there is no gallbladder the ducts take over its storage and concentrating function, since it is known by surgeons that after cholecystectomy the bile ducts become dilated. McMaster has put this hypothesis to the test by comparing the behavior of the ducts in mice, which have a gallbladder, and in rats, which have none, but finds that the ducts of the rat do not exhibit any power of concentrating bile such as is possessed by the gallbladders in other species. On the other hand, it was found that the bile as secreted by the liver of the rat is about eight times as concentrated as mouse bile, at least as far as pigment content goes, suggesting that the rat does not have a gallbladder since it has no need of concentrating its bile. Whether the same difference in concentration will be found universally between animals with and without gallbladders remains to be seen. Certainly it does not apply to the human subject, whose gallbladder does have active concentrating powers, and without which the bile ducts become distended to a degree that is far from normal, and possibly capable of injury to the hepatic tissues even if this injury is not clinically obvious. Furthermore, instead of the normal relation of bile discharge to the stage of digestion, after cholecystectomy a great difference is observed. Bile dribbles continuously from the ampulla of Vater, and during fasting may fill the duodenum and be voided as such in the stools. The disturbance of function thus indicated is not without a bad effect on the digestive processes, masked though this usually is. Rost applies the term "biliary incontinence" to the continuous escape of secretion into the intestine after removal of the gallbladder. The incontinence is associated with an abnormal relaxation of the sphincter; the latter, however, frequently recovers its tone as duct dilatation ensues. As Rous and McMaster say, the fact that few ills follow on removal of the normal gallbladder means merely that the body has adapted itself to the loss, not that the loss is unimportant. In this connection the surgeon would do well to remember that uncertainty as to function and confidence in readjustment are at best questionable motives for adventures in ablation.—*Jour. A. M. A.*

THE STATE MEDICAL SOCIETY OF WISCONSIN

ORGANIZED 1841

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SOCIETY PROCEEDINGS

BARRON-POLK-WASHBURN-SAWYER-BURNETT COUNTY

The meeting of this Society was held in Rice Lake, Wis., Tuesday, May 2.

PROGRAM

Icterus, by Dr. H. T. Nippert, of St. Paul.

Headaches of Ocular and Nasal Origin, by Dr. H. J. Rothchild, of St. Paul.

Tumors of the Breast, by Dr. J. H. Wallis, of Rice Lake.

Rectal Diseases, by Dr. A. D. Galloway, of Clayton.

The Tonsils, by Dr. E. J. Knapp, of Rice Lake.

I. G. BABCOCK,
Chairman Program Committee.

FOND DU LAC COUNTY

At a regular meeting of the Fond du Lac Medical society held April 12 at the Calumet hotel the doctors decided to close their offices every Saturday afternoon and evening during the summer months, beginning May 1, and continuing until the first Saturday in November. Resolutions were passed to this effect.

Dinner was served at 6:30, covers being laid for 18 members. Dr. O. M. Layton gave an interesting paper on "Diagnostic Value of the Reflex." A discussion led by Dr. S. E. Gavin followed.

FOX RIVER VALLEY MEDICAL SOCIETY

The annual meeting of the Fox River Valley Medical society will be held Friday, June 2nd at 2 P. M., at Oshkosh, Wis.

The following program has been arranged:

Drs. Wm. Warthin and Hugh Cabot, University of Michigan, "Clinico-Pathologic Conference."

Dr. George Fahr, University of Minnesota. "Hypertension."

Dr. C. R. Bardeen, University of Wisconsin. "The Practical Importance of the Study of Human Build."

A banquet will be given at six o'clock following the program. We think that this is an unusually strong program and wish to invite and urge all the members of the profession in the Fox River Valley to attend. A cover charge of $2.00 will be made against non-members.

Robt. L. Cowles, Secretary.

ROCK COUNTY

More than forty physicians and surgeons attended a meeting of the Rock County Medical Association at the Beloit Y. M. C. A. April 25. Doctors from all the cities in the county were in attendance.

Dr. C. F. N. Schram, of Fairbanks-Morse and company, gave a lecture on the relation of industry to health. He presented several facts which he had been able to gather first hand from his experience among shop men, and their susceptibility to disease. He also told of the relationship which exists between fatigue and injury. Workers who are tired are more apt to become lax in their carefulness, thus courting accidents.

Mrs. Mary P. Morgan of the State Board of Health, Madison, Wis., read a paper on the benefits of the Shepard-Towner act for mothers who are unable to have good medical attendance, during the pre-natal stage and afterwards. This act will provide appropriations for the education and care of such mothers by state social and welfare workers. Mrs. Morgan said this act was especially beneficial in the congested districts of the larger cities and isolated country localities. Dale Thompson entertained the doctors with selections on several musical instruments.

MILWAUKEE ACADEMY OF MEDICINE

Tuesday, April 25th, at 8:15 P. M. Sharp

1. Presentation of Clinical Cases, Pathological Specimens and Interesting Roentgenograms.
2. A Case of Infectious Granuloma Involving the Skin. Dr. B. H. Schlomovitz. (By Invitation.)
3. Peripheral Sensory Disturbance in Pernicious Anemia. Dr. D. W. Roberts.
4. The Management of Acute Cranial Injuries (Lantern Slide). Dr. Harry Jackson, of Chicago.

Lawrence G. Sykes, M. D., Secretary.

UNIVERSITY OF WISCONSIN MEDICAL SOCIETY

THE ACID-BASE EQUILIBRIUM IN THE ANIMAL BODY

DR. A. E. KOEHLER

Dr. Koehler introduced his discussion of this important question by the relation of the historic aspect of the problem, stating that in early medicine physicians empirically used wood ash to counteract the acid condition of the body. He pointed out how progress in this field had been hampered by the use of titration methods only, and how the introduction of hydrogen ion concentration had led to more accurate determinations. He defined the term and outlined the method of determining the PH. For example, the PH of distilled water is taken as 7 and on increasing alkalinity is represented by figures above this level, as, for instance, blood PH 7.4; whereas any figure of PH in the blood lower than this represents an approach toward acidity and is for practical purposes termed acidosis.

In the blood are found certain buffers (weak acids or alkaline salts) which by the combinations with the hydrogen ion counteract radical shifts in the bodily reactions. In the blood, for example, we have three parts of H_2CO_3 to sixty (60) parts of $NaHCO_3$, the former being weakly acid and the latter slightly alkaline, the resultant reaction giving us a PH of 7.4. The ratio of these two factors will determine a third, that is, a change of PH concentration in either the acid of alkaline direction. Dependent also on this reaction is the ratio of th hemoglobin to the oxyhemoglobin. A formula as follows may be constructed:

$$\frac{HbO_2}{Hb} = \frac{H_2CO_3}{NaHCO_3} = PH$$

and similar fashion, the concentration of the chlorides in the plasma may be determined:

$$\frac{PCl}{PH} = H_2CO_3 = NaHCO_3$$

In other words, all of these factors bear a constant relation in a given case and variations in the relationship of any two are reflected in the third.

Dr. Koehler next demonstrated by an interesting diagram the interchanges occurring between the chemical constituents of the plasma and of the blood corpuscles in circulation, particularly in relation to the interchanges in the lung and in the tissues, showing that when oxygen is given up to the tissues by the red blood cells, CO_2 is shifted from the tissues to the plasma and the red blood cells take over the chlorine radical from the sodium chloride of the plasma. This relatively higher acid reaction of the corpuscles is conducive to a more rapid taking up of the oxygen in the alveoli and the chloride shifts back to the sodium radical in the plasma the CO_2 being given off. Elaborating on this point he made use of Van Slyke's diagram to show how dependent on the volumes percent of total CO_2 in the blood in relation to the tension of the CO_2 in the blood, the PH may be determined; and with this in hand he showed that the normal range of hydrogen ion concentration was between 7.3 and 7.5. He likewise discussed the Lawrence Henderson chart, showing that with a knowledge of two variables any one of four others might be determined. This chart had a particular value in determining the oxyhemoglobin and the chloride concentration in the plasma. Both charts merely express quantitatively what the diagram did qualitatively. He pointed out that the difference between the arterial PH and venous PH was very slight, the arterial 7.450, the venous 7.432. Between the levels of 7.3 and 7.0 are the conditions of acidosis such as are seen in diabetic coma and uremia, whereas between 7.5 and 7.7 are the conditions of alkalosis such as occur in tetany clinically.

Dr. Koehler stated that acute clinical fevers and inartifically induced fevers there was a primary alkalosis, even, in certain cases to the limit of tetany with cyanosis, and the clinical importance of this fact lies in the change in the oxygen carrying power of the blood; for instance, where in certain pulmonary obstructions cyanosis is accompanied by an alkalosis, the feeding of fixed acids is indicated. Where there is more alkaline blood there is lessened carbondioxide interchange in the tissues. The changes in the vessel lumen dependent on reaction are important. Weak acids give rise to a physiologic dilatation and then constriction, whereas alkalies give rise to primary constriction. These reactions have some bearing on the problem at hand. Dr. Koehler discussed the question of acidosis without any elaboration since this question has received so wide attention in all the literature of a considerable time past, but he did stress the point that customary procedure of determining only the volume percent CO_2 in the blood was not sufficient criterion of the reaction. In other words, the CO_2 tension in the blood was likewise essential to the determination of the PH.

This paper was discussed by Drs. Loevenhart, Eyster, Dawson, Bradley, and Middleton.

NEWS ITEMS AND PERSONALS

Dr. Clive Nedry, a member of the clinic staff of Medford, has returned from abroad where he took a post graduate course in eye, ear, nose and throat diseases. The doctor has resigned from the clinic and will become associated with Dr. G. H. Lawrence at Stevens Point.

No applicants for examination for resident physician at the South View hospital, Milwaukee, have appeared, although the examination was scheduled for April 20. The position pays $1,800 a year, with complete maintenance.

Dr. Louis M. Warfield, prominent in Milwaukee medical circles, has been appointed professor of internal medicine by the regents of the University of Michigan, and will leave Milwaukee soon to accept the post.

Dr. O. B. Bock has been temporarily appointed health commissioner of Sheboygan in place of Dr. H. C. Reich, who died April 26.

Bids have been opened on the new Ripon Hospital, but the building committee at the present time are without sufficient funds to let the contract. It is expected however that arrangements will be made in the near future to raise funds so that the work can be started.

Dr. Walter C. Reineking, who has been serving in the capacity of resident physician at the Wisconsin State Sanatorium for the past four years, has been elected Superintendent and Medical Director of the Rockford Municipal Sanatorium at Rockford, Ill., and will take charge in the immediate future.

At the last regular meeting of the Physicians' Club of Keokuk, Iowa, on motion of Dr. F. M. Fuller, it was decided to authorize the treasurer, Dr. C. A. Dimond, to make a subscription of twenty-five dollars to the permanent Foundation Fund of the Tri-State District Medical Society of Illinois, Iowa and Wisconsin. The subscription was made according to the treasurer, Dr. C. A. Dimond, to "encourage the progress and endowment fund of this remarkable and unique society."

Dr. Gilbert E. Seaman and Dr. Thomas L. Tolan are now located in their new office and infirmary, corner Mason and Cass Sts., Milwaukee, Wis.

Dr. Louis F. Jermain, of Milwaukee, has announced the removal of his office from the Majestic Building to 1701 Grand Av.

Dr. Walter Merritt, for several years Janesville health officer, was killed when his car turned turtle near Seattle, Wash., on April 19. Dr. Merritt practiced at Enumclaw, Wash., several years.

The saddlebags which were used by Dr. Samuel M. Crandall, one of the earliest physicians in Baraboo, have

been presented to the Sauk County Historical society by Mrs. Crandall.

Dr. I. F. Thompson, an epidemiologist with the bureau of communicable diseases, state board of health, has accepted appointment as deputy commissioner of health of the city of Milwaukee. He will succeed Dr. E. V. Brumbaugh, now health officer of Madison.

The Board of supervisors of Oneida county appropriated $20,000 this week to aid in the erection of an addition to the hospital at Rhinelander. In return the hospital has agreed to give free treatment and hospital accommodation to the county's paupers and charges for a ten year period.

All Wisconsin hospitals giving away babies for adoption, even with formal consent of the mother, must first be licensed by the state board of control. This opinion was expressed by R. M. Hoyt, deputy attorney general, to the state board of control, after its attention had been called to a Milwaukee hospital which had been acting as a home finding agency for babies of unmarried mothers. "If any hospital is doing the things which the statutes permit only licensed home finding agencies to do, then its acts are unlawful," the attorney general said. "The statute regulating adoption of children was passed in the interests of child welfare."

Twenty-two Wisconsin cities have organized classes in the public schools for mentally defective and subnormal children, according to Dr. Elizabeth Woods. Seventeen more cities are preparing, and fifteen have made the first move to secure help in selecting the children who should go into these classes. The groups are organized both to secure the best possible education for those less fortunate children and to free the other pupils from the drag on their work which these backward boys and girls necessitate when the same teacher must handle all the children, it was said.

Announcement has been made that Torger G. Thompson, of Deerfield, has offered $50,000 for the establishment of a Lutheran hospital and sanitarium in the city of Madison. The sanitarium is to be conducted under the auspices of the Norwegian Lutheran Church of America. This offer of $50,000 is made upon the condition that an additional $100,000 will be raised for the establishment of the hospital.

Burlington is making arrangements to build a modern and up-to-date hospital. This week citizens interested held a meeting and the sentiment seemed to be that if the sum of $20,000 could be raised among individuals in the city at this time, it would be sufficient to assure the balance necessary in the near future. It was the opinion that $50,000 would be required. A committee was appointed to investigate and upon its report will depend whether or not a drive for funds will be made.

The Fond du Lac County Medical society by resolution decided to close their offices on Saturday afternoon from May 1 to Nov. 1. The society met at the Hotel Calumet. A paper by Dr. O. M. Layton was discussed by Dr. S. E. Gavin.

Dr. William C. Felton, of Appleton, was elected city health officer to succeed Dr. H. E. Ellsworth by the common council at the first meeting of the new administration.

Announcement was made April 21 that Dr. W. J. Hanley has been named public health doctor to fill the vacancy made recently by the resignation of Dr. H. A. Robinson.

DEATHS.

Dr. H. Robbins, a pioneer of Oconto county and a veteran of the Civil War, died at his home in Kelly Lake, after a brief illness from pneumonia. The funeral services were under the auspices of the Oconto Falls Masonic order.

Dr. Hugo C. Reich, of Sheboygan, after eighteen years of faithful service as city health commissioner, died on April 26th, 1922.

Dr. Hugo C. Reich was born in Sheboygan, on January 5th, 1856. His early education was obtained in the public schools in the city of his birth. He studied pharmacy and for a number of years followed this profession. In the meantime he studied medicine and graduated from the Rush Medical college in the year 1897. He thereupon located in Sheboygan, where he successfully followed his chosen profession. He was appointed city health commissioner in 1904 and continued to hold this position until the time of his death.

The following resolutions were adopted by the Sheboygan County Medical Society:

Whereas, It has pleased the Almighty in his wisdom to take from our number our much respected and beloved colleague, Dr. Hugo Reich: and

Whereas, In his demise we have lost an efficient and untiring worker; and

Whereas, The community has lost a reliable official, who at all times has been devoted to his work of conserving the health of the community and staying the hand of the grim reaper, now, therefore, be it

Resolved, By the Sheboygan County Medical Society that we express our appreciation of the services that Dr. Hugo Reich has rendered the City and its inhabitants, and to the family our deep sympathy and condolence in this irreparable loss. Be it further

Resolved, That a copy of these resolutions be spread upon the minutes of the Sheboygan County Medical Society, and that one copy be forwarded to the Wisconsin State Medical Journal, another to the press of the City, and a fourth to the bereaved and sorrowing family.

SHEBOYGAN COUNTY MEDICAL SOCIETY.

MARRIAGES.

Dr. E. H. Gramling, Milwaukee, to Miss Lila White, Manitowoc, April 21.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

The Place of Version in Obstetrics. By Irving W. Potter, M. D., F. A. C. S. C. V. Mosby Company, St. Louis. 1922. Price $5.00.

Practical Infant Feeding. By Lewis Webb Hill, M. D., Junior Assistant Physician to the Children's Hospital, Boston: Assistant in Pediatrics, Harvard Medical School. Octavo of 483 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1922. Cloth $5.00 net.

A Psychoanalytic Study of Psychoses with Endocrinoses. By Dudley Ward Fay, Ph. D. Nervous and Mental Disease Monograph Series No. 33. New York and Washington, 1922. 122 pages.

Management of the Sick Infant. By Langley Porter, M. D., and Will E. Carter, M. D., both of the University of California Medical School. Illustrated. C. V. Mosby Co., St. Louis, 1922.. 654 pages. Price $7.50.

Surgical and Mechanical Treatment of Peripheral Nerves. By Byron Stookey, M. D. With a chapter on Nerve Degeneration and Regeneration, by G. Carl Huber, M. D. 475 pp. 217 illustrations, 8 in colors, and 20 charts. Philadelphia and London: W. B. Saunders Co. 1922. Price, $10.00.

The Thyroid Gland. Clinics of George W. Crile, M. D., and Associates at the Cleveland Clinic, Ohio. 228 pp. 106 illustrations. Philadelphia and London: W. B. Saunders Co. 1922. Price, $5.00.

Tuberculosis in Infancy and Childhood. By J. Claxton Gittings, M. D., and Frank C. Knowles, M. D. Philadelphia and London: J. B. Lippincott Co. 1922. 275 pp. Price, $5.00.

The Defective Delinquent and Insane. By Henry A. Cotton, M. D. Princeton University Press, Princeton, New Jersey. 1921. Price, $3.00.

The Psychic Health of Jesus. By Walter H. Bundy, Ph. D. New York: The MacMillan Co. 1922. Price, $3.00.

Opiate Addiction, Its Handling and Treatment. By Edw. Huntington Williams. The MacMillan Co. New York: Price, $1.75.

The Healthy Child From Two to Seven—A Handbook for Parents, Nurses and Workers for Child Welfare. By Francis Hamilton MacCarthy, M. D.

Suggestion and Auto-Suggestion. By Charles Boudouin, Professor at the Jean-Jacques Rousseau Institute. New York: Dodd, Mead & Co. 1921.

Vice and Health. By John Clarence Funk, M. A., LL. B. 174 pp. Philadelphia and London: J. B. Lippincott Co. 1921. Price, $1.50.

Essentials of Laboratory Diagnosis. Designed for students and practitioners. By Francis Ashley Faught, M. D., formerly Director of the Laboratory of the Department of Clinical Medicine and Assistant to the Professor of Clinical Medicine, Medico-Chirurgical College, etc., Philadelphia, Pa. Eleven full-page plates (four in colors) and seventy-eight text engravings. Seventh Revised and Enlarged Edition. F. A. Davis Company, Publishers, Philadelphia, Pa. 1921. Price, $4.50.

Papers from the Mayo Foundation For Medical Education and Research and the Graduate School of Medicine of the Univ. of Minn., covering the period of 1915-1920. 695 pp., 203 illustrations. Philadelphia and London: W. B. Saunders Co. 1921. Price, $10.00.

A Textbook of Physiology: For Medical Students and Physicians. By Wm. H. Howell, Ph. D., M. D., Prof. Physiology, Johns Hopkins Univ. 8th edition, thoroughly revised. 1053 pp. 308 illustrations. Philadelphia and London: W. B. Saunders Co. 1921. Cloth, $6.50.

A Textbook of General Bacteriology. By Edwin O. Jordan, Ph. D., Prof. Bacteriology, Univ. Chicago, and Rush Medical College. 7th edition, revised. 744 pp., illustrated. Philadelphia and London: W. B. Saunders Co. 1921. Cloth, $5.00 net.

Diseases of the Skin and the Eruptive Fevers. By Jay F. Schamberg, M. D., Prof. Dermatology and Syphilis, Univ. Pa. 4th edition, revised. 626 pp., 265 illustrations. Philadelphia and London: W. B. Saunders Co. 1921. Cloth, $5.00 net.

Clinical Tuberculosis. By Francis Marion Pottenger. Chapter on Laboratory Methods by Jos. E. Pottenger. In two volumes. 1400 pp. 170 illus., 10 color plates and charts. 2nd edition. St. Louis: C. V. Mosby Co. Price, $15.00.

Clinical Electrocardiography. By Frederick A. Willius, M. D. Section on Clinical Electrocardiography, The Mayo Clinic, Rochester, Minn., and the Mayo Foundation. 188 pp. 185 illus. Philadelphia and London: W. B. Saunders Co. 1922. Cloth, $5.00.

The Life of Jacob Henle. By Victor Robinson, M. D. New York: The Medical Life Co., 12 Mt. Morris Park, W. Price, $3.00.

Neoplastic Diseases. A treatise on Tumors. By James Ewing, M. D., Sc. D., Prof. Pathology, Cornell Univ. 2nd edition, revised and enlarged. 1054 pp. 514 illus. Philadelphia and London: W. B. Saunders Co. 1922. Cloth, $12.00.

Infant Feeding. By Clifford G. Grulee, M. D., LL. D., Associate Prof. Pediatrics, Rush Medical College. 4th edition, revised. 397 pp., illustrated. Philadelphia and London: W. B. Saunders Co. 1922. Cloth, $4.50.

Psychoanalysis: Its Theories and Practical Application. By A. A. Brill, Ph. D., M. D. Lecturer on Psychoanalysis and Abnormal Psychology, New York Univ. 3d edition, revised. 408 pp. Philadelphia and London: W. B. Saunders Co. 1922. Cloth, $5.00.

American Illustrated Medical Dictionary (Dorland). 11th edition, revised and enlarged. Edited by W. A. Newman Dorland, M. D. 1229 pp., 338 illus., 141 in colors. Containing over 1500 new terms. Philadelphia and London: W. B. Saunders Co. 1921. Flexible leather, $7.00 net; thumb index, $8.00 net.

The Mechanics of the Digestive Tract. By Walter C. Alvarez, M. D. 192 pp., 22 illus. New York: Paul B. Hoeber. Price, $3.50.

An Essay on the Physiology of Mind. By Francis X. Dercum, M. D., Ph. D., Prof. Nervous and Mental Diseases, Jefferson Medical College, Philadelphia. 150 pp. Philadelphia and London: W. B. Saunders Co. 1922. Cloth, $1.75.

Abdominal Pain. By Prof. Dr. Norbert Ortner, Chief of Medical Clinic, Univ. Pa. New York: The Rebman Co. 1922.

The Practical Medicine Series. Vol. V. Gynecology, edited by John C. Dudley. **Obstetrics,** edited by Jos. E. DeLee. Series 1921. Chicago: The Year Book Publishers. Price, $1.75. Price of series of eight volumes, $12.00.

South America—From a Surgeon's Point of View. By Franklin H. Martin, C. M. G., M. D., F. A. C. S., Director-General of American College of Surgeons. Introduction by Wm. J. Mayo. Chicago: Fleming H. Revel Co. 1922.

BOOK REVIEWS

The Place of Version in Obstetrics. Potter, Irving W., M. D., F. A. C. S. C. V. Mosby Company, St. Louis. 1922, Price $5.00.

In this brochure of 133 pages the author devotes 75 pages to a review of the literature. He gives many interesting quotations from the earlier obstetrical works and traces the development of version from ancient to modern times. This section of the book ends with reference to some of the more recent text books on obstetrics; his concluding remark being: "The present trend of obstetrical practice, undoubtedly seems away from, rather than toward, a more general employment of version as a routine procedure, even in more difficult situations, and a very general inclination to regard it as a difficult and dangerous operation, to be classed with major interventions like Cesarean Section only to be undertaken in the most desperate emergencies."

The remaining 58 pages give the technique of the two foot version which is used by Dr. Potter as a substitute for normal labor, answers to his critics, and a brief resume of his last two years' work. He gives an excellent, though brief, description of the technique used which is well worth reading. However, the essential points of the technique are not different from those described by Hodge in 1866. The book presents nothing which is particularly new or original and, in fact, the Author does not claim originality. It can not be considered an important contribution to successful obstetrical practice as suggested by the Publishers since it tries to popularize the delivery of all patients by either a two foot podalic version or abdominal Cesarean Section. This teaching is contrary to the fundamental rule of surgery which requires that we adapt the operative procedures to the needs of the patient rather than the patient to a certain type of operation.

Dr. Potter's statistics are of more than passing interest in that they show his remarkable physical endurance. He states that in the year ending August 31, 1920, he personally delivered 1,113 women and in the year ending August 31, 1921, 1,130 women. The performance of 80 abdominal Cesarean Sections in 1920 and 100 in 1921 indicates that he delivers most of his difficult cases by Cesarean Section and reserves version for women with normal pelves. It is noted that in spite of the large number of Cesarean Sections he had 4 craniotomies in 1921. A careful study of his published statistics did not furnish any convincing proof that version is a desirable substitute for normal labor, and no other new indication is suggested in this book.

C. H. D.

Practical Infant Feeding. By Lewis Webb Hill, M. D., Junior Assistant Physician to the Children's Hospital, Boston; Assistant in Pediatrics, Harvard Medical School. Octavo of 483 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1922. Cloth $5.00 Net.

Dr. Hill's book on infant feeding fills a long felt want in the problem of feeding babies. He deals with the physiological as well as the pathological side of this great question in such a manner that it will prove a great help to the general practitioner, and yet it contains a wealth of scientific facts.

F. C. C.

A Psychoanalytic Study of Psychoses With Endocrinoses. By Dudley Ward Fay, Ph. D. Nervous and Mental Diseases. Monograph Series No. 33, New York and Washington, 1922, 122 pages.

This thesis is a psychoanalytical study of twenty-two male patients in an experiment on psychoses associated with recognized endocrine disorders, conducted in St. Elizabeth's Hospital, Washington, by Dudley Ward Fay, Ph. D., Dr. Nolan, Dr. D. C. Lewis and Gertrude H. Davis.

The object was to discover whether there was any correlation between certain endocrine disorders and certain psychotic syndromes.

The results of this study, made on a selected group of patients who had recognizable endocrine disorders, is here published. The experiment lasted six months, and the report here given would be most interesting reading, not only to the specialist, but to every medical man.

Management of the Sick Infant. By Langley Porter, M. D., and Will E. Carter, M. D., both of the University of California Medical School. Illustrated. C. V. Mosby Co., St. Louis. 1922. 654 pages. Price $7.50.

The writers of this new text, impressed with the fact that they had been unable to find a text-book in the English language which dealt exclusively with the peculiarities of disease as it occurs in infants, and give us a most excellent work, devoted entirely to this subject. It is well written, thorough, and brings us the latest in this line of work, covering the field carefully and without omission, yet never tediously drawn out. It is well illustrated with fifty-four half tones and the final chapter on drugs will interest many a practitioner who has found difficulty in prescribing for babies. It is a work which would be welcome and found most valuable by the family physician.

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TREATMENT OF FRACTURES OF METACARPALS AND PHALANGES OF FINGERS.

The method presented by Ralph H. Wheeler, Chicago (*Journal A. M. A.*, February 11, 1922), is said to be most applicable to fractures of the proximal phalanges and metacarpals, but can be used successfully in fractures of the middle phalanges. The secret of extension of the fingers lies in something that can be attached to the skin which will not slip and at the same time not restrict circulation to any material extent. This can be accomplished with a strip of gauze bandage and a glue made of celluloid and acetone. To make this glue, enough celluloid (Wheeler uses scraps obtained from automobile top manufacturers) is dissolved in acetone to make a solution of the consistency of mucilage. The most satisfactory method is to glue a loop of gauze to each finger on which extension is desired, and while the glue is drying put a plaster-of-Paris cast on the forearm, extending from the fold of the wrist to within about 2 inches (5 cm.) of the fold of the elbow. In this cast a wire loop, which is so adjusted as to project 2 or 3 inches (from 5 to 7.5 cm) beyond the finger or fingers to be extended, is incorporated. In this method counterextension is made against the bulge of the muscles of the forearm; hence, in putting on the cast, but little padding should be used, otherwise when extension is applied it will crowd up. After the plaster hardens, the wire loop is adjusted to the line in which extension is desired and then a piece of rubber tubing is passed through the gauze loop attached to the finger and over the wire loop, and made fast with as much strain as is desired. Experience has taught that care must be observed not to put too much strain on, because blistering of the skin will follow and the gauze loop will loosen. In the few instances in which this has occurred, another loop has been applied, using the palmar and dorsal surfaces when the first loop was attached to the sides and vice versa, and extension continued without interruption. The method is particularly adapted to compound fractures because it allows free access to wounds.

Technic of Intramuscular (Epifascial) Injection. By John H. Stokes, M. D. *Medical Record*, April 30, 1921.

The author's experience with the injection of large quantities of solutions (100 cc., or more) into the buttocks directed his attention to a phenomenon which suggested that the contents of the so-called intramuscular injection, when properly introduced, are deposited not within the body of the gluteus maximus or between its fasciculi nor yet within the subcutaneous fat, but in the areolar tissue on the upper surface of the fascia forming the extension of the fascia lata covering the gluteus maximus. Following is an abstract of the pertinent facts:

1. *Position of the Patient.* Injections into the buttocks are best given with the patient lying prone on a table. Relaxation should be complete. His legs should be placed in a position of moderate internal rotation "toed in".

2. *Instruments.* The 2 c.c. glass Luer syringe and three lengths of needles, one for very thin or flabby buttocks; one for medium, and one for fat buttocks, are required.

3. *Point of Injection.* Injections into the buttocks should, in general, be given into the upper outer quadrant near its inner angle.

4. *Technic of Injection.* After sterilization with alcohol, the syringe is grasped with the right hand, while the left hand, placed flat on the buttocks, presses moderately and flattens and fixes the tissues. The needle is introduced to its full length by a quick stroke at an angle of 20 degrees from the vertical in a sagittal plane, with a slight inclination inward.

5. *Testing for the Presence of the Needle in a Blood Vessel.* As soon as the needle is introduced, the syringe is steadied with the left hand while an attempt is made to aspirate by pulling upward on the piston with the right hand. As soon as it appears that nothing can be aspirated from the deep tissue about the needle point, the contents of the springe may be injected, the right hand maintaining the proper angle of the needle. The flow of injected material should be free and the needle point should "feel" as if stuck in a board.

Attention is called to several details which contribute to a successful technic. The buttocks should be used in alternation for injection. Needle points should be of a rather long bevel and exceedingly sharp. The movement of the needle should be carefully controlled.

If a Needle Breaks. Presence of mind must be maintained. Do not exclaim or discuss the situation with the patient or nurse. Keep the left hand in position until an attempt can be made to recover the needle. The fragment just beneath the skin may sometimes be recovered by a small incision and with the aid of a hemostat. If the left hand is released from the buttocks, the needle is lost and can then be identified only by the roentgen ray and removed through an extensive surgical incision.

In regard to the use of insoluble suspensions for intramuscular injection, concentrated suspensions requiring small amounts for each injection are often less painful than thin suspensions. A satisfactory test of complete suspension consists of shaking until none of the suspension can be recognized in the groove at the juncture of the sides and bottom of the bottle when the bottle is inverted.

6. *Treatment of Complications.* If blood is obtained on aspiration after the introduction of the syringe, even in the minutest amount, the syringe should be withdrawn and the procedure repeated 1 cm. or more from the site of the unsuccessful attempt. To continue the injection in the face of a return of blood or even a tinged suspension, may be attended by fatal consequences from embolism. Heat, applications, and massage will relieve superficial indurations or nodules.

THERAPEUTIC NOTES

MEAT FOR THE HOSPITAL.

By a Member of the Department of Food Economics, Armour and Company.

Probably there is no class of caterers who have a harder problem than the person who plans for the hospital meal. Here they plan for the hard working help, the brain worker, and the convalescent or the sick person with the finicky appetite, as well as all the various special diets. Here more than any where else a knowledge of the use of the various cuts of meat is desirable. Here appetite appeal is very important. The successful dietitian is one who can use the same kind of meat many times and have it look and taste different. Nothing is less appetizing than to have the meal come to the table day after day looking and tasting just like the previous meal.

With these thoughts before us let us consider the so-called cheaper cuts of meat with the wide variety they make possible. The round, rump, shanks, plate, flanks and chuck constitute three-quarters of the weight of the entire carcass. Because the demand is for the loins and steaks that need no special skill in preparation, the heavier cuts are less expensive. While the long fibre which is characteristic of these cuts requires skill to prepare, so far as nourishment is concerned we find that there is practically no difference. For instance we find that a pound of medium fat beef rump contains 1400 calories of fuel value and a chuck 1105.

Having established a logical reason for these cuts being cheaper and realizing that there is practically no nutritive difference between them and the higher priced cuts, let us consider what skill is necessary to make them palatable.

One principle of cookery which will always govern is to subject the meat to the greatest heat first. Brown thoroughly the entire outside surface. This will keep in the natural juices of the meat. Then heat and add whatever liquid you have decided to use. Cover the pan tightly, reduce the heat and allow the meat to cook slowly until tender. During the entire process of cooking, after the liquid has been added, the temperature should be below the boiling point.

The seasoning of any dish is important to make it palatable. The enormous shipping facilities of today enable us to procure an endless variety of spices, herbs and seasonings. These make possible so many combinations that one seldom needs to use the same flavor twice. Thus two meat dishes, although they are made from similar cuts need not taste the same.

For some who do not care for the piquant flavor of the spices, or in cases where the carbohydrate content of the vegetable may be desirable, the vegetables may be added to the meat and cooked with it. In the case of children or others who think they don't like certain vegetables such as carrots or onions, the vegetables

Next is the appearance of the dish. If you have ever had a long siege of illness you can sympathize with the person who will turn away leaving his meal untouched or the one who will eat it under protest. It is so easy to make a little change in the appearance of a dish. Have the portion neat and the garnishings fresh and clean. There is every reason why the hospital should be genuinely concerned over the appearance of a tray no matter how strict the diet of the patient.

Such points are important also when serving the meals of the workers, as they help to eliminate waste. A hard working man or woman will eat all the food on his plate if it is well seasoned and appetizing in its appearance.

CONTROLLING ANESTHESIA.

When a solution of a local anesthetic is injected into a tissue its effect is limited by the rapid dispersion of the fluid; that is, the fluid is absorbed and carried off by the circulation, and the anesthesia is of short duration. True, the surgeon can control this condition when operating upon an extremity, as a finger, by throwing a ligature around the member, but even that procedure is open to objection.

If a means could be devised to hedge about the area of operation without engorging the tissues, such a device would be in insistent demand. No mechanical invention has yet offered itself, but we have an almost perfect check on the rapid absorption of the anesthetic in Adrenalin. This substance is readily soluble; it is compatible with all local anesthetics, physically, chemically and physiologically; and it is not irritant. Furthermore, it controls hemorrhage and, in operations on the mucous membranes, affords the operator a clear view of the field. By limitation of the absorption of the anesthetic it is possible to do an operation with less of the drug, and thereby the risk of toxic effect is minimized.

This subject is dealt with more at length in the advertising section, where the reader will find the fifth of the series of short articles on Adrenalin to which we have had occasion to refer in previous issues of this Journal. A perusal of the article and its preservation for future reference are suggested.

LIBRARIES IN PUBLIC HEALTH SERVICE HOSPITALS.

The fact that the sundry civil appropriation bill, reported to the House of Representatives, appropriates $100,000 for the purchase of library books, magazines, and papers for beneficiaries of war risk insurance will be welcome news to military patients in Public Health Service hospitals. The American Library Association, which still administers the libraries in the larger hospitals, is embarrassed financially and has to be assisted by other organizations. The Public Health Service had no appropriation which it could use for the purpose. The new appropriation saves the situation; but, unless it is made available immediately instead of not until July 1, as is customary, reading matter will necessarily be at a premium in all hospitals caring for soldier patients.

River Pines Sanatorium

It has been said, and with truth, that much of the success in the cure of tuberculosis rests with the patient himself. Without the determination, willingness and patience to stick to the cure for a long period, success is seldom obtained, and these qualities no sanatorium can give a patient. He must provide them for himself. Yet the right sanatorium will quicken in its patients the determination to win, will inspire them to achieve and will help them to cultivate the quality of patience. River Pines provides first of all the right environment, its patients live among congenial companions, its medical treatment is of the type that inspires confidence, and here the patient is treated as an individual. These are factors that make for success, and back of River Pines lies more than a decade of success in the treatment of tuberculosis. It is a sanatorium to which you can safely refer your patients.

For the Treatment of Tuberculosis Dr. J. W. Coon Medical Director
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A. I. ROSENBERGER, M. D., Res. Physician

no 2

THERAPEUTIC NOTES

A HANDY LITTLE REFERENCE BOOK FOR THE BUSY DOCTOR.

Parke, Davis & Company recently issued a little reference book on Adrenalin that should be in the hands of every practitioner of medicine. It is an excellent desk companion, most conveniently arranged for ready consultation.

In glancing through the pamphlet the reader is impressed by the fact that, after twenty years or thereabouts, Adrenalin occupies a position of importance in therapeutics second to that of no other medicinal agent. In other words, it is now recognized as a standard and indispensable preparation, notable especially for its efficiency in vasomotor disturbances, shock and collapse, hemorrhage, asthma, as an adjuvant in local anesthesia, and in the field of endocrinology. No less impressive is the great array of preparations of Adrenalin or preparations of which Adrenalin constitutes the principal ingredient.

Thus we have available pure Adrenalin in crystals and in tablet form, and Adrenalin Chloride in solutions of 1:1000, 1:2600 and 1:10,000 in hermetically sealed glass ampoules, exceedingly convenient for emergency use. The 1:1000 solution is also supplied in ounce bottles. Adrenalin Inhalant is nicely adapted for use in a nebulizer in the treatment of nasal and pharyngeal affections. Then we find Adrenalin Suppositories and Adrenalin Compound Suppositories for the treatment of rectal inflammatory affections, hemorrhoids, etc. The uses of Adrenalin Ointment, Adrenalin and Chloretone Ointment, and Apothesine Ointment suggest themselves in the control of inflammations of mucous membranes. The list of local anesthetic combinations includes Tablets of Adrenalin and Cocaine, Apothesine and Adrenalin, Apothesine Solution, Codrenin, and Locosthetic, the latter two being aqueous solutions designed particularly for the use of dentists.

It should be said in all fairness that Adrenalin is the original natural preparation of the active principle of the suprarenal gland. It is a vastly better product than any synthetic compound, and under the present highly perfected process of manufacture it is a stable and dependable preparation of uniform strength. In specifying the original Adrenalin the physician assures himself that his results in its use will not disappoint him. We suggest that our readers send for this little book, "Adrenalin in Medicine."

MEAT FOR THE HOSPITAL.

By a Member of the Department of Food Economics, Armour and Company.

Probably there is no class of caterers who have a harder problem than the person who plans for the hospital meal. Here they plan for the hard working help, the brain worker, and the convalescent or the sick person with the finicky appetite, as well as all the various special diets. Here more than any where else a knowledge of the use of the various cuts of meat is desirable. Here appetite appeal is very important. The successful dietitian is one who can use the same kind of meat many times and have it look and taste different. Nothing is less appetizing than to have the meal come to the table day after day looking and tasting just like the previous meal.

With these thoughts before us let us consider the so-called cheaper cuts of meat with the wide variety they make possible. The round, rump, shanks, plate, flanks and chuck constitute three-quarters of the weight of the entire carcass. Because the demand is for the loins and steaks that need no special skill in preparation, the heavier cuts are less expensive. While the long fibre which is characteristic of these cuts requires skill to prepare, so far as nourishment is concerned we find that there is practically no difference. For instance we find that a pound of medium fat beef rump contains 1400 calories of fuel value and a chuck 1105.

Having established a logical reason for these cuts being cheaper and realizing that there is practically no nutritive difference between them and the higher priced cuts, let us consider what skill is necessary to make them palatable.

One principle of cookery which will always govern is to subject the meat to the greatest heat first. Brown thoroughly the entire outside surface. This will keep in the natural juices of the meat. Then heat and add whatever liquid you have decided to use. Cover the pan tightly, reduce the heat and allow the meat to cook slowly until tender. During the entire process of cooking, after the liquid has been added, the temperature should be below the boiling point.

The seasoning of any dish is important to make it palatable. The enormous shipping facilities of today enable us to procure an endless variety of spices, herbs and seasonings. These make possible so many combinations that one seldom needs to use the same flavor twice. Thus two meat dishes, although they are made from similar cuts need not taste the same.

For some who do not care for the piquant flavor of the spices, or in cases where the carbohydrate content of the vegetable may be desirable, the vegetables may be added to the meat and cooked with it. In the case of children or others who think they don't like certain vegetables such as carrots or onions, the vegetables

Next is the appearance of the dish. If you have ever had a long siege of illness you can sympathize with the person who will turn away leaving his meal untouched or the one who will eat it under protest. It is so easy to make a little change in the appearance of a dish. Have the portion neat and the garnishings fresh and clean. There is every reason why the hospital should be genuinely concerned over the appearance of a tray no matter how strict the diet of the patient.

Such points are important also when serving the meals of the workers, as they help to eliminate waste. A hard working man or woman will eat all the food on his plate if it is well seasoned and appetizing in its appearance.

River Pines Sanatorium

It has been said, and with truth, that much of the success in the cure of tuberculosis rests with the patient himself. Without the determination, willingness and patience to stick to the cure for a long period, success is seldom obtained, and these qualities no sanatorium can give a patient. He must provide them for himself. Yet the right sanatorium will quicken in its patients the determination to win, will inspire them to achieve and will help them to cultivate the quality of patience. River Pines provides first of all the right environment, its patients live among congenial companions, its medical treatment is of the type that inspires confidence, and here the patient is treated as an individual. These are factors that make for success, and back of River Pines lies more than a decade of success in the treatment of tuberculosis. It is a sanatorium to which you can safely refer your patients.

For the Treatment of Tuberculosis Dr. J. W. Coon Medical Director
Stevens Point, Wisconsin.

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THERAPEUTIC NOTES

THE MODERN METHOD OF FEEDING INFANTS.

Modern infant feeding calls for a formula suited to the individual requirements of the individual baby. The physician now realizes that an infant deprived of breast milk must be fed as an individual. The nourishment from the infant's food is principally derived from cow's milk. The "foods" contain no mysterious life-giving elements but are used as modifiers. As such they are indispensable for their carbohydrate content, the added carbohydrate being necessary to make up for the loss of corbohydrate when cow's milk is diluted with water. It is also important that these "foods" are given as carbohydrates and should not contain a mixture of vegetable protein and fat, since the cow's milk supplies animal protein and fat in proportion suitable for the growth of most babies.

Infant feeding should be directly under the control of the physician. Realizing this important fact, Mead Johnson & Company of Evansville, Indiana, have manufactured a line of Infant Diet Materials suitable for the individual requirements of the individual baby. These products do not carry laity directions on the trade packages. Such directions on a package of food is the unsurmountable wall that differentiates between individual infant feeding and indiscriminate infant feeding. The physician may prescribe Mead's products with perfect confidence.

Mead's line of Infant Diet Materials consist of Mead's Dextri-Maltose (Dextrins and Maltose), Barley Flour, Dry Malt Soup Stock, Casec (Calcium Caseinate—for preparing Protein Milk), Arrowroot Flour and Cerena, all of which are supplied without any directions on the packages. Over and beyond the gratifying results obtained from Mead's products, the physician is given unlimited scope to his own creative talents, hence there will be a greater number of better babies in his immediate neighborhood. The mother who uses Mead's Diet Materials at the direction of her physician is disposed to place credit for the welfare of her baby where credit belongs, i. e., to the doctor. The Mead Johnson policy means the realization of an ethical ideal.

Interesting publications on Infant Feeding, prepared by Mead Johnson Company are well worth writing for. Letters addressed to them will receive personal attention from their Scientific Department.

DIPHTHERIA PROPHYLAXIS.

In view of the established fact that diphtheria can be prevented with as much certainty as smallpox or typhoid fever, it is disturbing to find that in certain communities the incidence of diphtheria is not on the wane. The procedure requisite for immunization is simplicity itself. Three subcutaneous injections, at intervals of about five days, of a mixture of toxin and antitoxin (Diphtheria Prophylactic, P. D. & Co.) is all that is needed to confer active immunity.

Because of the time required to elicit the full immune response to Diphtheria Prophylactic, contacts should receive the usual protective dose of the more rapidly acting. Diphtheria Antitoxin (Antidiphtheric Serum); Diphtheria Prophylactic may be given a few days later for more lasting effect. But for all individuals who have not been exposed to the disease, and for general prophylaxis in schools, hospitals, nurseries and other communities, the injection of Diphtheria Prophylactic is of itself sufficient.

The caution cannot be too often repeated that, if an individual has been recently exposed or actually has the disease, Diphtheria Antitoxin (Antidiphtheric Serum), because of its rapid action, is the imperative indication.

A HANDY LITTLE REFERENCE BOOK FOR THE BUSY DOCTOR.

Parke, Davis & Company recently issued a little reference book on Adrenalin that should be in the hands of every practitioner of medicine. It is an excellent desk companion, most conveniently arranged for ready consultation.

In glancing through the pamphlet the reader is impressed by the fact that, after twenty years or thereabouts, Adrenalin occupies a position of importance in therapeutics second to that of no other medicinal agent. In other words, it is now recognized as a standard and indispensable preparation, notable especially for its efficiency in vasomotor disturbances, shock and collapse, hemorrhage, asthma, as an adjuvant in local anesthesia, and in the field of endocrinology. No less impressive is the great array of preparations of Adrenalin or preparations of which Adrenalin constitutes the principal ingredient.

Thus we have available pure Adrenalin in crystals and in tablet form, and Adrenalin Chloride in solutions of 1:1000, 1:2600 and 1:10,000 in hermetically sealed glass ampoules, exceedingly convenient for emergency use. The 1:1000 solution is also supplied in ounce bottles. Adrenalin Inhalant is nicely adapted for use in a nebulizer in the treatment of nasal and pharyngeal affections. Then we find Adrenalin Suppositories and Adrenalin Compound Suppositories for the treatment of rectal inflammatory affections, hemorrhoids, etc. The uses of Adrenalin Ointment, Adrenalin and Chloretone Ointment, and Apothesine Ointment suggest themselves in the control of inflammations of mucous membranes. The list of local anesthetic combinations includes Tablets of Adrenalin and Cocaine, Apothesine and Adrenalin, Apothesine Solution. Codrenin, and Locosthetic, the latter two being aqueous solutions designed particularly for the use of dentists.

It should be said in all fairness that Adrenalin is the original natural preparation of the active principle of the suprarenal gland. It is a vastly better product than any synthetic compound, and under the present highly perfected process of manufacture it is a stable and dependable preparation of uniform strength. In specifying the original Adrenalin the physician assures himself that his results in its use will not disappoint him. We suggest that our readers send for this little book, "Adrenalin in Medicine."

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THERAPEUTIC NOTES

COUNCIL REMEDIES.

One of the most important developments in the medical history of the past five years has been the work of the Council on Pharmacy and Chemistry, of the American Medical Association. Their examination and analysis of newer remedies has done much to advance the standard of manufacturing pharmacy; it is safeguarding the doctor against inferior products, and indicating those for which misleading claims are made.

The cooperation of the doctor in using and prescribing Council-Passed products is making this work more effective each year. The cooperation of the manufacturers is, also, an encouraging recognition of the value of this service. A partial list of the Council-Passed remedies, manufactured by The Abbott Laboratories, Chicago, appears in this issue. These are obtainable on prescription at the leading pharmacies, or may be obtained direct, as desired.

IT MUST BE MADE RIGHT FROM THE START!

Norway is best known for her Midnight Sun and her immense Harvests of the Deep. Nature has nowhere been so prodigal in providing ideal conditions for the spawning, feeding and development of the *True Gadus Morrhuae*, than in the waters surrounding the far-famed Lofoten Islands, Norway. For a century or more, cod-liver oil has been recognized as a dependable and easily absorbed nutrient and more recent investigations reveal that it is an exceedingly fruitful source of the anti-rachitic vitamines. Cod-liver oil to be utilized to fullest extent by the system should be pure and sweet and free from admixture with inferior non-cod oils and also free from admixture with blood and gall—due to careless and unscientific handling of the livers. Cod-liver oil is as delicate as butter and in the selection and processing of the livers, should receive as much care as science has thrown around the production of pure milk. It must be made right from the start! For nearly half a century the producers of the "S. & B. Process" Clear Norwegian Cod Liver Oil have concentrated their endeavors and specialized upon the product of the livers of the *True Gadus Morrhuae*. Never satisfied with the quality of oils offered on the market, several years ago Scott & Bowne established their own cod-liver oil plants in Balstad (Lofoten), Norway, where under most exacting, modern scientific and hygienic conditions, the "S. & B. Process" is produced. This high-grade oil is then brought over seas in special containers to be refined in the unique S. & B. Laboratories in America. The "S. & B. Process" is the only cod-liver oil made in Norway and refined in America. This oil is guaranteed a 100% product of the livers of the *True Gadus Morrhuae* and absolutely free from admixture with other oils or impurities. Physicians may prescribe the "S. & B. Process" with an assurance that his patient will always receive the nutrient and vitamie virtues of cod-liver oil in truest form. We are reliably informed that liberal samples of this high-grade medicinal cod-liver oil will be sent to physicians on request. The address is, Scott & Bowne, Bloomfield, N. J.

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More than that, it means that the saliva which responds to this stimulation is frequently more normal than was found in the same mouth during the pre-stimulated period. This is one of the chief reasons why fruit should form a part of each meal, why each meal should open and likewise close with fruit.

It produces a copious, fluid, alkaline saliva which is so essential in order that the oral cavity may function properly.

Latterly various investigators have found that dentifrices should be mildly acidic like fruit to assist nature in maintaining a normal saliva. They have, moreover, proven that alkaline mouth preparations are contra-indicated in the mouth and should be abandoned because they oppose nature in maintaining normal oral secretions.

The most universally used acid dentifrice is *Pepsodent*. It is endorsed by many in the professions and used daily by millions because it stimulates salivary flow in manner similar to fruit.

HIGH-POTENCY ANTITOXIN.

The reticence which formerly characterized the attitude of certain physicians toward the injection of large doses of antitoxin in cases of diphtheria has almost entirely disappeared. This, in no small measure, is attributable to the enterprice of biological manufacturers in developing new and improved methods of antitoxin production.

The diphtheria antitoxin put out by Parke, Davis & Co. is remarkable for its concentration and purity. The total solids in this product have been reduced to a minimum, thereby practically eliminating the possibility of anaphylactic reactions. The high concentration of this antitoxin makes feasible the injection of an adequate number of antitoxic units in small bulk—a most desirable quality, since the pain and discomfort resulting from the injection are negligible and, if given subcutaneously or intramuscularly, absorption is hastened.

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THERAPEUTIC NOTES

WHY DOES GOLD SOMETIMES BLACKEN THE SKIN?

Under certain conditions, gold when worn in contact with the skin, is apt to produce a discoloration. It is not due to the quality of the gold but is the result of chemical conditions.

An excess of sulphur in the body will produce a blackness of the skin under gold rings, this being caused by the oil of the skin connecting with the gold. Oil in ointment, such as cold cream or soap, when not thoroughly washed off, will produce the same discoloration.

Oil contains more or less of oleic acid, which, in connection with gold, produces a chemical deposit, or oleate of gold, black in color.

—*The Milwaukee Optical Mfg. Co.*

NEW LABORATORIES FOR ABBOTT'S.

A substantial group of eight concrete buildings in North Chicago looms as evidence of the growth that is said to follow true service.

When the war cut off the import of medicinal chemicals used quite generally by physicians in this country, The Abbott Laboratories were among the first to provide for the urgent home demands. Such drugs as Barbital, Procaine and Cinchophen were produced in this period by its chemists under license from the Federal Trade Commission. Since that time there has been a continuously increasing demand for these and other high grade synthetics, under the Abbott label, necessitating an enlargement of manufacturing space and facilities.

Along with this, the research department of the firm is being enlarged and valuable new agents for the physician's use are being developed.

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Latterly various investigators have found that dentifrices should be mildly acidic like fruit to assist nature in maintaining a normal saliva. They have, moreover, proven that alkaline mouth preparations are contra-indicated in the mouth and should be abandoned because they oppose nature in maintaining normal oral secretions.

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The effect of fruit juices in the mouth is now quite clearly understood. The common expression that a taste of orange or apple makes one's mouth water means that these mildly acidic fruit juices have the peculiar power to stimulate salivary flow.

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THE NEWER MEDICINAL CHEMICALS.

On Friday evening, January 6th, Dr. Alfred S. Burdick, President of The Abbott Laboratories, Chicago, delivered an address before the Chicago Branch of the American Pharmaceutical Association, on the "Newer Medicinal Chemicals". The rapid growth of American Chemistry through cooperation of all research agencies in this country, was emphasized by the speaker.

Concrete examples of American achievements in synthetic chemistry were recited, and a plea made for the support of the medical and pharmaceutical professions to preclude the possibility of our again becoming dependent upon foreign sources for chemical supplies. The history of Arsphenamine, Barbital, Cinchophen, Neocinchophen, Chlorazene, Procaine, the Benzyl Esters and other synthetic medicinal chemicals was outlined. Announcement was also made of a number of new chemical bodies recently developed, and others on which research work was now being done by The Rockerfeller Foundation various Universities, the American Medical Association and The Abbott Laboratories.

In conclusion, Dr. Burdick urged both physicians and pharmacists to prescribe and dispense medicinal chemicals by the newer American names, rather than to perpetuate the pre-war dominance of foreign synthetics. This position was supported by the Council on Pharmacy and Chemistry of the American Medical Association, in whose laboratories American medicinal products have been analyzed and found to be equal and in some cases superior to foreign made products.

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The Abbott Laboratories is supplying Butyn, in tablets (with and without Epinephrin) and 2% solutions, which may be had without narcotic blanks.

Milk is the universal food. In some cases it is hard to handle because the acid stomach forms indigestible clots. This curdling may be overcome without altering the value of the milk. In chymogenized milk the casein is precipitated in flocculent particles. In this form the casein is easily digested. Where the whole milk is wanted, boil, let cool to 105 degrees F. and add Chymogen.

If whey is wanted heat the milk to 105 degrees F., add Chymogen. When the curd is set, cut, drain off whey and use. Chymogen is from the Armour Laboratories.

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The history and physical examination were of little value in making the diagnosis of syphilis. They aided in only six, or 18.7 per cent of the cases.

The history of the previous pregnancies was helpful in sixteen, or 61.5 per cent of the multiparae.

Eight unquestionably syphilitic multiparae carried all of their previous pregnancies to the period of viability and gave birth to living infants, 34.7 per cent.

This high percentage of living infants born to untreated syphilitic mothers emphasizes the need for the routine prenatal Wassermann test and microscopic examination of every placenta.

If private patients object to the Wassermann test the placenta at least may be examined in order that early treatment in latent cases may be inaugurated.

The routine Wassermann test is a most valuable aid to prenatal work. This test, however, at times is misleading, for a positive reaction during pregnancy occasionally becomes negative after delivery, even though no treatment has been given.

Salvarsan may be given at any stage of pregnancy and its value is indicated by the following results:

Eleven cases that received one to three injections gave birth to five living nonsyphilitic infants and three infected ones that have done remarkedly well under treatment.

Seventeen cases that received five or more injections were delivered of fourteen nonsyphilitic infants and one syphilitic infant and the infection in the latter has been easily controlled by treatment.

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EFFECTIVE IODINE THERAPY

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Iodalbin is one of the later iodine compounds intended for internal use. It is a compound of iodine and blood albumin, containing approximately 21.5 per cent. of iodine. When administered by the mouth Iodalbin suffers little change in the acid contents of the stomach, but on passing into the intestine it is dissolved by contact with the alkaline secretions and on absorption exerts a physiologic action similar to that of the soluble iodides.

One great advantage possessed by Iodalbin is the fact that it is insoluble in the acid gastric contents. There is consequently less possibility of the distressing symptoms which so frequently follow the soluble iodides. Its blandness makes it acceptable to sensitive patients, and it is especially gratifying to those who object to the taste and nauseating effect of sodium or potassium iodide.

Iodalbin is manufactured by Parke, Davis & Company, whose advertisement appears elsewhere in this issue, and who offer to send descriptive literature to inquiring physicians.

AN EMERGENCY REMEDY

When the heart fails suddenly, as in shock, collapse, or anaphylaxis, the physician stands in need of a heart tonic that will act at once and that can be administered hypodermically. There is probably nothing in the whole materia medica that will serve him so well in such an emergency as Adrenalin (P. D. & Co.).

Of almost equal urgency is the condition of the asthmatic patient when the attack comes on; and the rapidity with which Adrenalin acts in these cases has made it indispensable throughout the medical world.

Persistent gastric hemorrhage makes the same sort of demand upon the physician; and here too Adrenalin, acting directly on the neurovascular tissues, stanches the bleeding almost instantly. In other forms of hemorrhage it is often useful also.

Adrenalin, we are told, is accurately standardized on animals, its effect upon the blood-vessels being demonstrated by the administration of as small an amount as 1/6000 grain.

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HOME-COMING MEETING—MILWAUKEE—
September 7, 8 and 9, 1921.

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ROCK SLEYSTER, M. D., Secretary-Editor
J. P. McMAHON, M. D., Managing Editor

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ORIGINAL ARTICLES

The Use of Stimulants in Pneumonia, By Louis M. Warfield, A. B., M. D., Milwaukee 1
The Surgical Treatment of Empyema Complicating Pneumonia, by Wilson Cunningham, M. D., F. A. C. S., Platteville 4
The Pathology of the Pneumonias Found in the Recent Epidemics of Influenza, by Drs. Daniel Hopkinson and E. L. Tharinger, Milwaukee 10
Local Anesthesia in Thyroidectomies, by Herman F. Derge, A. B., M. D., Eau Claire 14
Megalocolon, by Thomas Walter Nuzum, M. D., Janesville 17
Sacro Iliac Joint Arthrodesis by Bone Splitting Method, By F. J. Gaenslen, Milwaukee 20

EDITORIALS

Home-Coming Meeting 24
Service 24
Shortage of Physicians 24
How to Kill Any Organization 25
Are We Guilty? 25
The Get Together Spirit 26
As Others See Us 26

THE JOURNAL CLINIC

Clinic of Dr. H. P. Greeley, Madison 28
Clinical Case Report by Drs. Joseph F. Smith and Merritt L. Jones, Wausau, Wis 30
Clinic of Dr. V. F. Marshall, Appleton, Wis 31
St. Joseph's (Milwaukee) Medical and Surgical Clinic, Dr. L. F. Jermain 34

PREVENTIVE MEDICINE.

Some Aspects of School Nursing, by Miss Emily Isabel Elliott 37
The Relation of the Health Officer to the Public Health Nurse in Communicable Disease Control, by Dr. Louis Dorpat, Rhinelander 38
List of Executive Officers of State and County Medical Societies 42
Society Proceedings 43
News Items and Personals 44
Deaths 45
Book Reviews 23, 45, 48
The Journal Book Shelf 46

(Continued on Advertising Page VI)

[Entered as second class matter, June 30th, 1903, at the Post Office at Milwaukee, Wis., under Act of Congress March 3rd, 1879.]
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ORIGINAL ARTICLES

X-Ray Examination of the Chest and An X-Ray Classification of Pulmonary Tuberculosis, By Kennon Dunham, M. D., Cincinnati, Ohio 49
The Influence of Certain Cardio-Vascular Conditions Upon Surgical Risk, By Arthur T. Holbrook, M. D., Milwaukee 58
When To Operate Mastoid In Children, By Everett H. Brooks, M. D., Appleton 66
The Importance of Early Incision of the Membranum Tympani in Acute Otitis Media With Profuse Exudate, By L. P. Allen, M. D., F. A. C. S. Oshkosh 69

EDITORIALS

The Physician 76
The Home Coming Meeting 76
"He Profits Most Who Serves Best" 76
Some Questions Answered 77
As Others See Us 78

THE JOURNAL CLINIC

Report of a Case of Glioma of the Brain Demonstrating the Necessity of a Complete History as Essential to Correct Diagnosis, By Andrew I. Rosenberger, M. D., Milwaukee 80
Case of Primary Sarcoma of the Lung, By. Dr. Louis F. Jermain, M. D., Milwaukee 82
Open Safety Pins in the Stomach and Intestine, By H. O. Caswell, M. D. & P. J. Majerus, M. D., Fort Atkinson, Wis. 83
University of Wisconsin Medical Society May Meeting. Chronic Diseases of the Hip Joint, By Frederick J. Gaenslen, M. D., Milwaukee 84
Splenectomy for Congenital Hemolytic Jaundice, By Edmund H. Mensing, M. D. & Malcolm F. Rogers, M. D., Milwaukee 85

PREVENTIVE MEDICINE

Observations on Industrial Hygiene and Sanitation in Wisconsin, By Dr. Robert Olesen, Madison 86
Pure Water, By M. Starr Nichols, M. D., Madison, Wis. 89

MISCELLANY

List of Executive Officers of State and County Medical Societies 94
Society Proceedings 95
Association News 96
News Items and Personals 97
The Journal Book Shelf 100
Book Reviews 101

(Continued on Advertising Page VI)

[Entered as second class matter, June 30th, 1903, at the Post Office at Milwaukee, Wis., under Act of Congress March 3rd, 1879.]
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ORIGINAL ARTICLES.

Selection of Operation in Toxic Goiter, by S. J. Seeger, M. D., Milwaukee 105
Cancer Investigation and Experimental Cancer, by William E. Ground, M. D., F. A. C. S., Superior, Wis. 107
The Premature Contraction, by Fred M. Smith, M. D., Chicago, Ill. 114
Physio-Therapeutic Treatment in War Injuries and industrial Accidents, by James C. Elsom, M. D., University of Wisconsin 116
Epidemic Encephalitis, by Arthur W. Rogers, M. D., Oconomowoc 122
The Internal Secretions of the Skin, by Karl W. Doege, M. D., F. A. C. S., Marshfield, Wis. 125

EDITORIALS.

Home-Coming Meeting 130
Preliminary Report of Chairman, Committee of Arrangements 130
Ohio's Medical Practice Laws Held Constitutional by Supreme Court; State Medical Board Vindicated and Chiropractic Injunction Dissolved 131

THE JOURNAL CLINIC

St. Joseph's (Milwaukee) Medical and Surgical Clinic, Prolapsus Uteri, Complicated by Double Pyosalpinx, by Chester M. Echols 134
Case of Acromegaly, by Dr. Louis F. Jermain 135
Empyema Following Pneumonia in Infant of Four Months. By J. Gurney Taylor, M. D., Milwaukee 136
The Post Operative Care of Complete Perineal Lacerations, by H. W. Shutter, M. D., Milwaukee 136
Ureterolithotomy Followed by a Rare Post-Operative Complication, by E. A. Fletcher, M. D., and W. H. Kearns, M. D., Milwaukee 138
Lung Abscess Following Tonsillectomy, by F. D. Murphy, M. D. 139
A Case of Peritoneal Tuberculosis Treated with Radium, by Dr. Robert E. Fricke, M. D., Baltimore, Md. 141

PREVENTIVE MEDICINE.

Deaths from Diphtheria, by Geo. C. Ruhland, M. D., C. J. Kenney, M. D., L. Schiller, M. D. 142
Industrial Hygiene and Home Environment: With Special Reference to the Incidence of Tuberculosis, by Robert Olesen, M. D. 144

MISCELLANY

List of Executive Officers of State and County Medical Societies 148
Society Proceedings 149
Association News 149
Correspondence 152
News Items and Personals 152
The Journal Book Shelf 155
Book Reviews 156

(Continued on Advertising Page VI)

[Entered as second class matter, June 30th, 1903, at the Post Office at Milwaukee, Wis., under Act of Congress March 3rd, 1879.]
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ORIGINAL ARTICLES

Some Contributions of Young Men to Medicine, by Matt McGarty, M. D., La Crosse, Wis. 161
Peripheral Nerve Injuries in Civil Life, by Dean Lewis, M. D., Chicago 169
Selection of Operation in Toxic Goiter, by S. J. Seeger, M. D., Milwaukee 175
The Relationship Between the Pathology and Symptomatology of Goiter, by Ernest V. Smith, M. D., F. A. C. S., Fond du Lac 179
A Resume of the Ocular Manifestations in Pregnancy, by Nelson M. Black, M. D., Milwaukee 181
Refraction of School Children, by Joseph Bellin, M. D., Green Bay 184

EDITORIALS

A Gorgas Creed 190
Why Not Use Our Sanatoria More? 190
The Study and Control of Cancer in Wisconsin 191
Seventy-Fifth Annual Meeting 192
As Others See Us 192

THE JOURNAL CLINIC

Metastatic Infection, by John H. Rishmiller, M. D., F. A. C. S., Minneapolis, Minn. 194

PREVENTIVE MEDICINE

The Workmen's Compensation Act and the Doctors, by Mr. Thomas F. Konop 197

MISCELLANY

List of Executive Officers of State and County Medical Societies 204
Society Proceedings 205
Association News 205
News Items and Personals 208
The Journal Book Shelf 211
Book Reviews 211

(Continued on Advertising Page VI)

[Entered as second class matter, June 30th, 1903, at the Post Office at Milwaukee, Wis., under Act of Congress March 3rd, 1879.]
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ORIGINAL ARTICLES

A Plea for the Gridiron Incision in Appendicitis, by Victor F. Marshall, M. D., Appleton, Wis. 215

Gall-Stones: Their Basal Etiology, by Edwin Henes, Jr., A. B., M. D., F. A. C. S., Milwaukee, Wis. 220

The Management of Cardiac Diseases in a Children's Dispensary, by A. B. Schwartz, M. D. 225

Report on an Epidemic of Gastro-Enteritis, by G. H. Fellman, M. D., Milwaukee 227

Defective Delinquents in the Army of Occupaton or the American Forces in Germany, by Lt. Col. L. Vernon Briggs, M. R. C., U. S. Army 230

EDITORIALS

Work 234
Tri-State District Medical Society 234
Every Physician Should Be a Member 234
Early Diagnosis of Cancer 235
A Doctor of the Old School 236
As Others See Us 236

THE JOURNAL-CLINIC

Clinic of F. Gregory Connell, M. D., Oshkosh 238
Clinic of Dr. L. M. Warfield at Milwaukee County Hospital 242
Clinic of Dr. George Fahr, University of Wisconsin, Madison 244
Clinic of Drs. T. W. and A. R. Tormey, Madison 246

PREVENTIVE MEDICINE

Some Observations on the Prevention and Control of Communicable Diseases, by Gideon Benson, M. D., Richland Center, Wis. 248

MISCELLANY

List of Executive Officers of State and County Medical Societies 252
Society Proceedings 253
Association News 254
Correspondence 256
News Items and Personals 257
The Journal Book Shelf 259
Book Reviews 259

(Continued on Advertising Page VI)

[Entered as second class matter, June 30th, 1903, at the Post Office at Milwaukee, Wis., under Act of Congress March 3rd, 1879.]
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ORIGINAL ARTICLES.

The Sequelae of Epidemic Encephalitis, by Peter Bassoe, M. D., Chicago 263
Ocular Manifestations in Encephalitis Lethargica, by Gustavus I. Hogue, M. D., F. A. C. S., Milwaukee.. 268
Metabolic Diseases Caused by Tissue Extract (Cytost), by Fenton B. Turck, M. D., New York 271
Infections of the Kidney, by W. J. Tucker, M. D., Ashland, Wis. 277
Obstetrics in Rural Communities, by B. J. Wadey, Belleville 285

EDITORIALS.

Increasing Output by Preventing Tuberculosis 290
Some Statistics on Old Age 291
The Medical Society 292
As Others See Us 292

THE JOURNAL CLINIC.

Obesity, by Hugh P. Greeley, M. D., Madison 295
Clinic of Henry B. Hitz., M. D., Milwaukee 296
Circumscribed Ectasia of the Cornea, by G. N. Brazeau, M. D., F. A. C. S., Milwaukee 296
Report of a case of Cardio-Spasm with Enormous Dilatation of the Esophagus, by Thomas J. Snodgrass, M. D., Janesville 297

PREVENTIVE MEDICINE.

Oral Hygiene as a Public Health Problem, by V. A. Gudex, M. D, D. D. S., Eau Claire, Wis 300

MISCELLANY

List of Executive Officers of State and County Medical Societies 306
Society Proceedings 307
News Items and Personals 307
The Journal Book Shelf 310
Book Reviews 310

(Continued on Advertising Page VI)

[Entered as second class matter, June 30th, 1903, at the Post Office at Milwaukee, Wis., under Act of Congress March 3rd, 1879.]
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ORIGINAL ARTICLES

Industrial, State and Group Medicine, by Burt R. Shurly, M. D., Detroit, Michigan 313
The Doctor for the Age of Doubt, by Neil Andrews, M. D., Oshkosh 317
Blood Transfusion, by Roger T. Cooksey, M. D., Madison 322
Medical Practice in Wisconsin, By W. H. Washburn, M. D., Milwaukee 324
The After-Care in Tonsillectomy, by V. A. Chapman, M. D., Milwaukee 328

EDITORIALS.

Your "Competitor" 332
Public Health Clinics 332
Postgraduate Study in Obstetrics 333
Power of Organization 333
As Others See Us 334

THE JOURNAL CLINIC

The Treatment of Central Nervous System Syphilis with A New Arsenical, by Wm. F. Lorenz, M. D 336
St. Joseph's (Milwaukee) Monthly Clinic for Physicians. Contributed by Drs. Stratton, Echols, and Jermain.
By Chester M. Echols 337
By Dr. F. A. Stratton 338
By Dr. L. F. Jermain 340
Intravenous Treatment for Hay Fever, by John P. Koehler, M. D., Chief of Milwaukee County Dispensary 341
Bainbridge's Shellac 343

PREVENTIVE MEDICINE

An Illustration of the Importance of Prompt Reporting of Communicable Diseases by the Physician to the Health Officer, By Louis Dorpat, M. D., Rhinelander 343
Factors Responsible for the Increase of Typhoid Fever in Wisconsin, During the Year 1921, by F. F. Bowman, M. D., Madison 345
Public Health News Items 347

MISCELLANY

List of Executive Officers of State and County Medical Societies 350
Society Proceedings 351
Correspondence 352
News Items and Personals 352
The Journal Book Shelf 356
Book Reviews 356

(Continued on Advertising Page VI)

[Entered as second class matter, June 30th, 1903, at the Post Office at Milwaukee, Wis., under Act of Congress March 3rd, 1879.]
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SEVENTY-FIFTH ANNUAL MEETING

Transactions of the Seventy-Fifth Annual Meeting of the State Medical Society of Wisconsin, at Milwaukee, September 7, 8 and 9, 1921 361
List of Members of the State Medical Society of Wisconsin, 1921 400

ORIGINAL ARTICLES

The Fate of the Bone Graft, by A. F. Jonas, M. D., Omaha, Nebr. 407
Unlocalized Intracranial Injuries, Indications for Surgical Treatment, by Curtis A. Evans, A. B., M. D., F. A. C. S., Milwaukee 410

EDITORIALS

A New Year's Creed 416
Sidney S. Hall 416
United States Public Health Service 417
The Nursing Problem 417
Wisconsin Surgical Association 418
As Others See Us 418

THE JOURNAL CLINIC

Clinic of Dr. L. M. Warfield at the Milwaukee County Hospital 420
Clinic of Philip F. Rogers, M. D., Milwaukee 423
Periosteal Sarcoma, Operation by Dr. Echols 424
Water Balance Diabetes Insipidus and Water Intoxication, by Dr. L. G. Rowntree, Rochester, Minn. 426
Experimental Arterio-Sclerosis, Br. Dr. L. H. Newburgh,, University of Michigan, Ann Arbor, Mich. . 427
Postgraduate Courses in Obstetrics 427

PREVENTIVE MEDICINE

The Public Health Nurse As An Epidemiologist, by Robert Olesen, Surgeon, United States Public Health Service, Epidemiologic Aide With Wisconsin State Board of Health, Madison 429
Public Health News Items 432

MISCELLANY

List of Executive Officers of State and County Medical Societies 434
Society Proceedings 435
News Items and Personals 436
The Journal Book Shelf 439
Book Reviews 440

(Continued on Advertising Page X)

[Entered as second class matter, June 30th, 1903, at the Post Office at Milwaukee, Wis., under Act of Congress March 3rd, 1879.]
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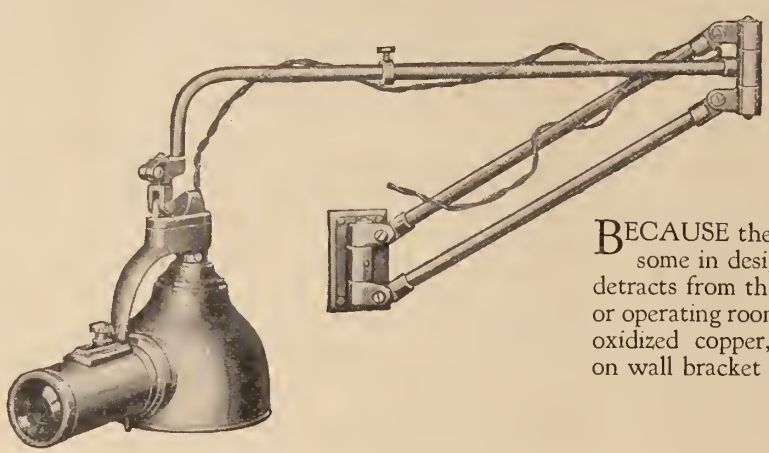

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ORIGINAL ARTICLES

The Use of Anti-Serum in Streptococcus Septicaemia, by Harold E. Marsh, M. D., Claire O. Vinigom, Madison 443

The Effect of Occlusion of the Coronary Arteries on the Heart's Action and Its Relationship to Angina Pectoris, by Warfield T. Longcope, M. D., New York City 449

The Relation that Exists Between Hypertension, Myocarditis and Nephritis, by Henry A. Christian, M. D., Boston 455

Tumors of the Breast from the Standpoint of the General Practitioner and the General Surgeon, by Arthur Dean Bevan, M. D., Chicago, Illinois 460

EDITORIALS

Pay Your Dues!! 468
The Shepard-Towner Bill in Wisconsin 468
The Referendum on the Use of Alcohol 469
Leslie's on Chiropractic 470
As Others See Us 471

THE JOURNAL CLINIC

Splenic Anemia, or Banti's Disease, Dr. Louis F. Jermain 472
Splenectomy, by Dr. F. A. Stratton 473
Acute Ileus Produced by a Large Gallstone, Dr. Chester M. Echols 474
Report of a Case of Erythromalalgia Associated with Polycythemia Vera, by James A. Evans, M. D., and A. A. Skemp, M. D. 475

PREVENTIVE MEDICINE

The Prevention of Goitre, by Robert Olesen, Madison .. 477
Public Health News Items 479

MISCELLANY

List of Executive Officers of State and County Medical Societies 484
Society Proceedings 485
Association News 486
News Items and Personals 490
The Journal Book Shelf 492
Book Reviews 493

(Continued on Advertising Page X)

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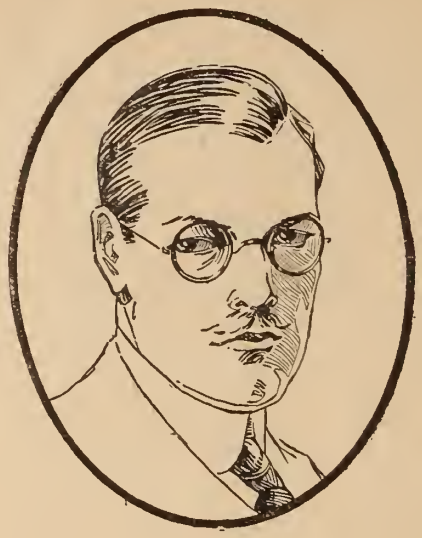

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ORIGINAL ARTICLES

Types of Severe Anemia, by Dr. Alfred Stengel, Philadelphia 497
The Relation of Splenic Syndromes to the Pathology of the Blood, by William J. Mayo, M. D., Rochester 503
Physiologic Rationale for Intrathoracic Surgery, by J. L. Yates, M. D., Milwaukee 510
Some Recent Advances in Chemistry as Aids to the Clinician, by H. C. Bradley, Madison 513
Luminal in the Treatment of Epilepsy, by F. D. Murphy, M. D., Milwaukee 519

EDITORIALS

A Personal Question 523
Medical Organization 523
"Medical Advisory Committee" of Avon Lake 523
Our Advertisers 525
Abstract of an Editorial in the Chester County Medical Reporter 525
As Others See Us 526

THE JOURNAL CLINIC

An Interesting Case of Lung Disease, by A. A. Pleyte, M. D., Milwaukee 526
Acidosis, by Hugh P. Greeley, M. D., Madison 527
Uremia Following Gastro-Enterostomy—Eight Cases, by W. J. Tucker, M. D., Ashland 528
St. Joseph's Hospital Medical and Surgical Clinic, by Chester M. Echols, M. D., Milwaukee 529

PREVENTIVE MEDICINE

Water as a Factor in the Spread of Typhoid Fever, by H. M. Guilford, B. S., M. D., Madison 531
Cancer Week Program—State of Wisconsin, by Dr. I. F. Thompson, Madison 532
Public Health News Items 535

MISCELLANY

List of Executive Officers of State and County Medical Societies 537
Society Proceedings 538
Association News 540
News Items and Personals 541
The Journal Book Shelf 544
Book Reviews 546

(Continued on Advertising Page X)

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ORIGINAL ARTICLES

Some Aspects of the Local Anesthesia Problem, by Robert Emmett Farr, M. D. 547
A Consideration of Two Common Types of Cardiac Arrhythmia, by Malcolm F. Rogers, M. D., Milwaukee, Wis. 551
The Surgery of Infantile Paralysis, by F. J. Gaenslen, M. D., Milwaukee 555
Early Wisconsin Medical History, by Hugh P. Greeley, M. D., Madison 558

EDITORIALS

Importance of Reporting Tuberculosis 570
Suggestions for Program For May 12th 571
Premedicated Alcohol 572

THE JOURNAL CLINIC

Case Report of Cholecystitis Complicating Paratyphoid Fever with Subsequent Isolation of Bacillus Paratyphosus from the Bile, by T. F. Reitz, M. D. 573
Purpura Hemorrhagica, by L. F. Jermain, M. D., Milwaukee 575
Milwaukee County Hospital Clinic, by Louis M. Warfield, M. D., Milwaukee 577
University of Wisconsin Medical Society Meeting, March 8, 1922 580

PREVENTIVE MEDICINE

Diphtheria Carriers, by W. D. Stovall and E. A. Scheid, Madison 581
Public Health News Items 585

MISCELLANY

List of Executive Officers of State and County Medical Societies 587
Society Proceedings 588
Association News 588
Correspondence 589
News Items and Personals 590
Deaths 592
The Journal Book Shelf 593
Book Reviews 594

(Continued on Advertising Page X)

[Entered as second class matter, June 30th, 1903, at the Post Office at Milwaukee, Wis., under Act of Congress March 3rd, 1879.]
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ORIGINAL ARTICLES

Symposium on Cancer, Arranged by Benj. H. Schlomovitz, M. D., Milwaukee 599
The Sociologic Aspects of Cancer and the Obligation of the Medical Profession to Perfect Itself in Early Diagnosis, by P. H. McGovern 600
Some Cancer Questions, by C. H. Bunting 602
Diagnosis of Cancer of the Buccal Cavity, by G. V. I. Brown 603
Early Diagnosis in Gastro-Intestinal Carcinoma, by Phillip F. Rogers 605
Cancer of the Breast, by J. L. Yates 607
Symptoms and Diagnosis of Cancer of the Female Generative Tract, by J. P. McMahon 608
Cancer of the Urinary Tract, by E. A. Fletcher 615
Carcinoma Cutis—A Diagnostic Outline, by Harry R. Foerster 619
An Endocrine Staff Meeting, by A. A. Skemp, M. D., La Crosse 621
The Value of Radium in the Treatment of Malignant Neoplasms, by Reginald H. Jackson, M. D., Madison 624

EDITORIALS

Louis M. Warfield 629
What of the Future? 629
Smallpox 630
As Others See Us 630
The Passing of the Country Doctor 631

THE JOURNAL CLINIC

Spontaneous Pneumothorax 632
Pityriasis Rosea, by R. D. Thompson, M. D., and A. C. Edwards, M. D., Reedsburg, Wis. 633
The Relation of Heart Disease and Pregnancy. Sir James Mackenzie. Lancet, 201:1163, London, June 4, 1921. Abstracted by H. W. Shutter, M. D., Milwaukee 634

PREVENTIVE MEDICINE

The Schick Test 636
Public Health News Items 639

MISCELLANY

List of Executive Officers of State and County Medical Societies 643
Society Proceedings 644
News Items and Personals 645
The Journal Book Shelf 647
Book Reviews 648

(Continued on Advertising Page X)

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